

MARQUETTE UNIVERSITY

Graduate Bulletin



MARQUETTE
UNIVERSITY

2006–2007

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

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

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

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

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

The university reserves the right to amend any of its academic programs, requirements for degrees, tuitions, fees, etc., at anytime, in its total discretion.

The 2006–2007 *Graduate Bulletin* is also available on Marquette University's Web site www.marquette.edu. While the university strives to maintain an accurate online bulletin, the printed bulletin is the university's official document. The provisions of this bulletin are subject to change at any time by Marquette University in its sole discretion.

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The Graduate School

INTRODUCTION

LOCATION

The Graduate School office is located in Holthusen Hall, 305, 1324 W. Wisconsin Avenue, Milwaukee, WI 53233. Office hours are 8 a.m. to 4:30 p.m. with the exception of national or university holidays when the office is closed. Mail should be sent to Marquette University Graduate School, P.O. Box 1881, Milwaukee, WI 53201-1881. The Graduate School's telephone number is (414) 288-7137, the fax number is (414) 288-1902, the electronic mail address is mugs@marquette.edu, and the Web site is www.grad.mu.edu.

PUBLICATIONS

GRADUATE BULLETIN

The *Graduate Bulletin* contains information regarding the academic calendar, admissions, degree requirements, fees, regulations, and course offerings. Prospective and current graduate students are responsible for all information contained in this bulletin that is pertinent to graduate study and their specific field. Graduate students may follow the program requirements of the bulletin that is in effect at the time they submit their application, or any other bulletin used during their enrollment. However, students must abide by only one bulletin's rules. If any exceptions to this policy are required due to length of time between submitting an application and beginning the program, the student will be notified in writing of the applicable bulletin to follow. In order to properly audit a student's academic record for graduation, the student must notify the graduate school in writing if any bulletin other than the one in effect at the time of application is to be used. Furthermore, the policy applies primarily to master's degree students; doctoral students are bound by the specifics of their approved *Doctoral Program Planning Form*.

Graduate School students must assume full responsibility for knowledge of the rules and regulations of the Graduate School and the special requirements of their individual degree programs. It is the responsibility of each graduate student to verify and meet the deadlines listed in the Academic Calendar (e.g., for submitting financial aid forms, submitting theses or dissertations). The Academic Calendar for 2006–2007 is located on the inside front and back covers of this bulletin.

CHANGES TO THE GRADUATE BULLETIN

Marquette University reserves the right to make changes of any nature in its programs, calendar, or academic schedule whenever in its sole judgement it is deemed necessary or desirable. Certain provisions in the bulletin may be in the process of amendment or change. Accordingly, the bulletin is not intended to be relied upon as a statement of the university's contractual undertakings. The decision of Marquette University as to the interpretation and method of implementation of its rules, regulations, program requirements, schedules, and calendars shall be conclusive and final.

The information in this bulletin and other university bulletins, publications, or announcements may change without notice. Current information is available from the Graduate School.

SCHEDULE OF CLASSES AND SNAPSHOT

The *Schedule of Classes* is published on CheckMarq, the online registration system, found at <https://checkmarq.mu.edu/> or www.marquette.edu/registrar/snapshot. All available classes are listed for any term specified. Instructions for using CheckMarq may be found at www.marquette.edu/pdfs/checkmarq/registration_tutorial.pdf.

FINANCIAL AID INFORMATION GUIDE

The publication *Award Information Guide* provides an overview of the available financial aid, debt management, students rights and responsibilities, and federal loan programs. Copies are available at the Office of Student Financial Aid. Information about different types of financial aid available to graduate students may be found in this bulletin under Financial Aid.

ACCREDITATION

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

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

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 it did at other American colleges and universities. Demand for graduate and professional education grew.

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

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

Today Marquette University has a campus of approximately 80 acres and more than 50 buildings located in downtown Milwaukee. It consists of 11 colleges and schools:

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

MISSION STATEMENT — GRADUATE SCHOOL

The mission of the Marquette University Graduate School is to contribute to the discovery of knowledge through scholarly activities, to provide leadership in defining the graduate experience, and to advocate for an environment that nurtures exploring and learning. To accomplish its mission, the Graduate School ensures quality, consistency and continuity in graduate programs; establishes and monitors institutional commitment to standards; and stimulates improvement and change in the research and pedagogical settings. The Graduate School communicates with stakeholders in a continuing effort to maintain the centrality of graduate education to the mission of Marquette University and to excite the graduate environment.

MISSION STATEMENT — MARQUETTE UNIVERSITY

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 life-long 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.

PREPARING FUTURE FACULTY PROGRAM

The Marquette University Preparing Future Faculty (PFF) Program, in collaboration with the Marquette University Center for Teaching and Learning, has developed the Documentation of Teaching Program to help prepare interested graduate students for a career in academia. Students with other career interests are welcome to engage in PFF activities, and may find the programs on developing a résumé, building presentation skills, and preparing for job interviews particularly helpful.

The PFF Documentation of Teaching Program requires graduate students to meet requirements in the following areas: (1) Theory and research on effective teaching and learning in higher education; (2) Introduction to specific teaching skills; (3) Obtaining feedback on teaching; (4) Assessing student learning; (5) Teaching with technology – e-learning applications; (6) Applying and interviewing for faculty positions; (7) Obtaining external funding.

In order to meet these requirements, graduate students have the option of either taking graduate classes offered by the School of Education or attending colloquia, workshops, and conferences sponsored by PFF. These PFF events satisfy many of the requirements or address pedagogic and professional issues to enhance the professional development of graduate students. Topics covered range from technology in the classroom to grant writing, and from the job search process to diversity in the classroom.

Participants of the PFF Documentation of Teaching Program create a professional portfolio detailing their achievements and abilities and providing future employers with a wealth of relevant information. The portfolio may include documents on: a) teaching (mentoring and development); b) publications; c) conference work/participation; d) professional development; e) institutional awareness; and f) university and community service.

Successful completion of the requirements for the PFF Documentation of Teaching Program is recognized with a notation on the graduate student's official university transcript and is verified by a document issued by the PFF program and the Graduate School.

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 differences. This call to action is integral to the tradition which we share.

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.

DEGREES OFFERED

PROGRAM <i>(Programs found alphabetically throughout this bulletin unless noted, in italics, below.)</i>	DEGREE	SPECIALIZATIONS	PROGRAM ADMINISTERED BY: (college/department/school/center)
Accounting (ACCO) <i>Business Administration</i>	M.S.A.	*	Business Administration
Bioinformatics (BIIN)	M.S.	*	Mathematics, Statistics and Computer Science / Medical College of Wisconsin
Biological Sciences (BSCI)	M.S.	Cell Biology (CEBI) Developmental Biology (DEBI) Ecology (ECOL) Epithelial Physiology (EPPH) Genetics (GENE) Microbiology (MICR) Molecular Biology (MOBI) Muscle and Exercise Physiology (MUEX)	Biological Sciences
	Ph.D.	Cell Biology (CEBI) Developmental Biology (DEBI) Ecology (ECOL) Epithelial Physiology (EPPH) Genetics (GENE) Microbiology (MICR) Molecular Biology (MOBI) Muscle and Exercise Physiology (MUEX) Neuroscience (NSCI)	Biological Sciences / Biomedical Sciences
Biomedical Engineering (BIEN)	M.S.	Bioinstrumentation/Computers (BICO) Biomechanics/Biomaterials (BIOM) Rehabilitation Bioengineering (REBI) Systems Physiology (SYPH)	Biomedical Engineering
	Ph.D.	Bioinstrumentation/Computers (BICO) Biomechanics/Biomaterials (BIOM) Rehabilitation Bioengineering (REBI) Systems Physiology (SYPH) Functional Imaging (FUIM)	Biomedical Engineering / Medical College of Wisconsin
Business Administration (BUAD)	M.B.A.	e-Business (EBUS) Economics (ECON) Finance (FINA) Human Resources (HURE) International Business (INBU) Management Information Systems (MISY) Marketing (MARK) Total Quality Management (TQMA)	Business Administration
Chemistry (CHEM)	M.S., Ph.D.	Analytical Chemistry (ANCH) Bioanalytical Chemistry (BIAN) Biophysical Chemistry (BIPH) Chemical Physics (CHPH) Inorganic Chemistry (INCH) Organic Chemistry (ORCH) Physical Chemistry (PHCH)	Chemistry
Civil Engineering (CEEN)	M.S., Ph.D.	Construction/Public Works Management (CONS) Environmental/Water Resources Engineering (ENWA) Structural/Geotechnical Engineering (STGE) Transportation Engineering and Planning (TREP)	Civil and Environmental Engineering
	Certificate	Construction Engineering and Management Structural Design Transportation Water and Wastewater Treatment Processes Water Resources Engineering	
Communication (COMM)	M.A.	Advertising and Public Relations (ADPR) Broadcast and Electronic Communication (BREC) Communication Studies (CMST) Journalism (JOUR) Mass Communication (MASS) Religious Communication (RECO) Science, Health and Environmental Communication (SHEC)	Communication
	Certificate	Professional Communication (PRCO)	

* No formal specialization offered. Some programs allow students to focus their courses or electives in a specific area of interest. Contact the program department for more information.

PROGRAM <i>(Programs found alphabetically throughout this bulletin unless noted, in italics, below.)</i>	DEGREE	SPECIALIZATIONS	PROGRAM ADMINISTERED BY: (college/department/school/center)
Computing (COMP)	M.S.	*	Mathematics, Statistics and Computer Science
Counseling (COUN)	M.A.	Community Counseling (COMC) School Counseling (SCHC)	Counseling and Educational Psychology
Counseling Psychology (COPS)	Ph.D.	*	Counseling and Educational Psychology
Dentistry (DENT)	M.S.	Dental Biomaterials (BIMA) Endodontics (ENDO) Orthodontics (ORTH) Prosthodontics (PROS)	Dentistry
	Certificate	Advanced Training in General Dentistry (Completion) Endodontics (Specialty) Orthodontics (Specialty) Prosthodontics (Specialty)	
Dispute Resolution (DIRS)	Certificate (See Leadership Studies or Public Service for master's degree with DIRS specialization)	*	Graduate School
Economics (ECON) <i>Business Administration</i>	M.S.A.E.	Business Economics (BUEC) Financial Economics (FIEC) International Economics (IECO) Real Estate Economics (REEC)	Business Administration
Educational Policy and Leadership (EDPL)	M.A., M.Ed. Ph.D. Specialist Certificate	Curriculum and Instruction (CUIN) Educational Leadership (EDLE) * Curriculum and Instruction (CUIN) Educational Leadership (EDLE)	Educational Policy and Leadership
Educational Psychology (EDPS) <i>Counseling and Educational Psychology</i>	M.A.	*	Counseling and Educational Psychology
Electrical and Computer Engineering (EECE)	M.S., Ph.D. Certificate	* Applied Solid-state Electronics Computers and Signal Processing Electric Machines, Drives, and Controls Microwaves and Antennas Solid-state Device Sensors	Electrical and Computer Engineering
Engineering Management (ENMA)	M.S.E.M.	*	Business Administration / Mechanical Engineering
English (ENGL)	M.A. Ph.D.	British and American Literature (BRAM) American Literature (AMLI) British Literature (BRLI)	English
Executive Master of Business Administration (EXBU) <i>Business Administration</i>	M.B.A.	e-Business (EBUS) Economics (ECON) Finance (FINA) Human Resources (HURE) International Business (INBU) Management Information Systems (MISY) Marketing (MARK) Total Quality Management (TQMA)	Business Administration
Foreign Languages and Literatures (FOLL)	M.A., M.A.T.	Spanish (SPAN)	Foreign Languages and Literatures
Gerontology (GERT)	Certificate	*	Wisconsin Geriatric Education Center / Dentistry
Healthcare Technologies Management (HCTM)	M.S.	*	Biomedical Engineering / Business Administration / Medical College of Wisconsin
History (HIST)	M.A., Ph.D.	European History (EURO) United States History (USHI)	History
Human Resources (HURE) <i>Business Administration</i>	M.S.H.R.	*	Business Administration
Interdisciplinary Ph.D. (INPR)	Ph.D.	*	Graduate School
International Affairs (INAF) <i>Political Science</i>	M.A.	*	Political Science
Law Enforcement Leadership and Management (LELM)	Certificate	*	Professional Studies
Leadership Studies (LEDR)	M.L.S. Certificate	Administration of Justice (ADJU) Dispute Resolution (DIRS) Health Care Administration (HECA) Non-profit Sector (NPSE) Public Service (PUBS) *	Professional Studies

* No formal specialization offered. Some programs allow students to focus their courses or electives in a specific area of interest. Contact the program department for more information.

PROGRAM <i>(Programs found alphabetically throughout this bulletin unless noted, in italics, below.)</i>	DEGREE	SPECIALIZATIONS	PROGRAM ADMINISTERED BY: (college/department/school/center)
Mathematics, Statistics and Computer Science (MSCS)	M.S.	Computer Science (COSC) Mathematics (MATH) Mathematics Education (MAED)	Mathematics, Statistics and Computer Science
	Ph.D.	Algebra (ALGE) Biomathematics (BMTH) Logic and Foundations (LOFO) Statistics (STAT)	
Mechanical Engineering (MEEN)	M.S., Ph.D.	Energy Systems (ENSY) Manufacturing Systems (MNSY) Mechanical Systems (MESY)	Mechanical Engineering
Nursing (NURS)	M.S.N.	Advanced Practice Nursing: Acute Care (ACCA) Adults (ADUL) Children (PEDI) Nurse-midwifery (MIDW) Older Adults (GERO) Clinical Nurse Leader (CLNL) Health Care Systems Leadership (HCSL)	Nursing
	Post-master's Certificate	Acute Care Nurse Practitioner (ACNP) Adult Nurse Practitioner (ADNP) Gerontologic Nurse Practitioner (GENP) Nurse-midwifery (NUMI) Pediatric Nurse Practitioner (PENP)	
Philosophy (PHIL)	Ph.D.	*	
	M.A.	History of Philosophy (HIPH) Social and Applied Philosophy (SOAP)	Philosophy
	Ph.D.	Ancient Philosophy (ANPH) British Empiricism/Analytical Philosophy (BREM) Christian Philosophy (CHRI) Early Modern European Philosophy (MOPH) Ethics (ETHI) German Philosophy (GEPH) Medieval Philosophy (MEPH) Phenomenology-Existentialism (PHEN) Philosophy of Religion (PHRE)	
Physical Therapy (PTH) <i>Marquette University Undergraduate Bulletin</i>	D.P.T.		Health Sciences
Physician Assistant Studies (PHAS) <i>Marquette University Undergraduate Bulletin</i>	M.P.A.		Health Sciences
Political Science (POSC)	M.A.	*	Political Science
Psychology	(See Counseling, Counseling Psychology, Educational Psychology, and Psychology, Clinical)		
Psychology, Clinical (CLPS) <i>Psychology</i>	M.S., Ph.D.	*	Psychology
Public Service (PUBS)	M.A.P.S.	Administration of Justice (ADJU) Dispute Resolution (DIRS) Health Care Administration (HECA) Leadership Studies (LEDR) Non-profit Sector (NPSE)	Professional Studies
Religious Studies (REST) <i>Theology</i>	Ph.D.	Biblical Theology (BITH) Historical Theology (HITH) Systematic Theology (SYTH) Theological Ethics (THET) Theology and Society (THSO)	Theology
Speech-Language Pathology (SPLA)	M.S. Certificate	* Bilingual English-Spanish (BIES)	Speech Pathology and Audiology
Theology (THEO)	M.A.	Biblical Theology (BITH) Historical Theology (HITH) Systematic Theology (SYTH)	Theology
	M.A.C.D.	*	
Transfusion Medicine (TRME)	M.S.T.M.	Business Administration (BUAD) Education (EDUC) Science (SCIE)	Graduate School

* No formal specialization offered. Some programs allow students to focus their courses or electives in a specific area of interest. Contact the program department for more information.

Legend of Abbreviations:

M.A.	Master of Arts	M.S.A.	Master of Science in Accounting
M.A.C.D.	Master of Arts in Christian Doctrine	M.S.A.E.	Master of Science in Applied Economics
M.A.P.S.	Master of Arts in Public Service	M.S.E.M.	Master of Science in Engineering Management
M.A.T.	Master of Arts in Teaching	M.S.H.R.	Master of Science in Human Resources
M.B.A.	Master of Business Administration	M.S.N.	Master of Science in Nursing
M.Ed.	Master of Education	M.S.T.M.	Master of Science in Transfusion Medicine
M.L.S.	Master in Leadership Studies	D.P.T.	Doctor of Physical Therapy
M.P.A.	Master of Physician Assistant Studies	Ph.D.	Doctor of Philosophy
M.S.	Master of Science		

Definitions

Certificate — An acknowledgement of a group of courses taken at the graduate level. Certificates are awarded in certain programs after completion of at least 12 credits. Students must have a bachelor's degree to be considered for admission.

Master's Degree — Degree conferred on students completing at least 30 credits. A thesis, professional project or essay may also be required. Students must have a bachelor's degree to be considered for admission.

Post-master's/Specialist Certificate — An acknowledgement of a group of classes taken at the graduate level. Post-master's/specialist certificates are awarded after the student has completed a specified number of credits, depending on the program. Students must have a master's degree to be considered for admission.

Doctoral Degree — The highest degree conferred by Marquette University. Normally a maximum of 60 credit hours of course work beyond a bachelor's degree which may include credits taken to receive a master's degree. Students must have a bachelor's degree to be considered for admission. A master's degree may be required prior to or while pursuing the doctoral degree.

JOINT PROGRAMS OFFERED

Specializations for the joint degree programs are the same as the specializations listed in the DEGREES OFFERED section.

PROGRAM <i>(Program information located in italicized section)</i>	DEGREES	PROGRAM ADMINISTERED BY: <i>(college/department/school)</i>
Business Administration (BUAD) <i>Business Administration</i>	M.B.A. and J.D. ★ M.B.A. and M.A. (International Affairs) M.B.A. and M.A. (Political Science) M.B.A. and M.S.N.	Business Administration / Law Business Administration / Political Science Business Administration / Political Science Business Administration / Nursing
Communication (COMM) <i>Communication</i>	M.A. and M.A.	Communication / Political Science
Dispute Resolution (DIRS) <i>Dispute Resolution</i>	Certificate and J.D.	Professional Studies / Law
International Affairs (INAF) <i>Political Science</i>	M.A. and M.B.A. M.A. and J.D.	Political Science / Business Administration Political Science / Law
Nursing (NURS) <i>Nursing</i>	M.S.N. and M.B.A.	Nursing / Business Administration
Philosophy (PHIL) <i>Philosophy</i>	M.A. and J.D.	Philosophy / Law
Political Science (POSC) <i>Political Science</i>	M.A. and M.A. M.A. and M.B.A. M.A. and J.D.	Political Science / Communication Political Science / Business Administration Political Science / Law

★ Specializations offered: Sport Business in addition to the standard M.B.A. specializations.

BACHELOR'S-MASTER'S PROGRAMS OFFERED

PROGRAM <i>(Program information located in italicized section)</i>	DEGREES	PROGRAM ADMINISTERED BY: <i>(college/department/school)</i>
Accounting (ACCO) <i>Business Administration</i>	B.S. and M.S.A.	Business Administration
Biomedical Engineering (BIEN) <i>Engineering</i>	B.S.B.E. and M.S.	Biomedical Engineering
Civil Engineering (CIEN) <i>Engineering</i>	B.S.C.E. and M.S.	Civil and Environmental Engineering
Economics (ECON) <i>Economics</i>	B.A. and M.S.A.E. B.S. and M.S.A.E.	Arts and Sciences Business Administration
Electrical and Computer Engineering (EECE) <i>Engineering</i>	B.S.E.E. and M.S. *	Electrical and Computer Engineering
Human Resources (HURE) <i>Business Administration</i>	B.S. and M.S.H.R.	Business Administration
International Affairs (INAF) <i>Political Science</i>	B.A. and M.A.	Political Science
Mechanical Engineering (MEEN) <i>Engineering</i>	B.S.M.E. and M.S.	Mechanical Engineering
Nursing for Non-Nursing Graduates (NURS) <i>Nursing</i>	B.S.N. and M.S.N.	Nursing
Political Science (POSC) <i>Political Science</i>	B.A. and M.A.	Political Science
Speech-Language Pathology (SPLA) <i>Speech-Language Pathology</i>	B.S. and M.S.	Speech Pathology and Audiology

* Two majors exist within the undergraduate Electrical Engineering Program: electrical and electronic engineering, and electrical and computer engineering. Both programs lead to the degree of bachelor of science in electrical engineering (B.S.E.E.).

Legend of Abbreviations:

B.A.	Bachelor of Arts	M.A.	Master of Arts
B.S.	Bachelor of Science	M.B.A.	Master of Business Administration
B.S.B.E.	Bachelor of Science in Biomedical Engineering	M.S.	Master of Science
B.S.C.E.	Bachelor of Science in Civil Engineering	M.S.A.	Master of Science in Accounting
B.S.E.E.	Bachelor of Science in Electrical Engineering	M.S.A.E.	Master of Science in Applied Economics
B.S.M.E.	Bachelor of Science in Mechanical Engineering	M.S.H.R.	Master of Science in Human Resources
B.S.N.	Bachelor of Science in Nursing	M.S.N.	Master of Science in Nursing
J.D.	Juris Doctor		

Definitions

See DEGREES OFFERED section for certificate and degree definitions.

APPLICATION PROCEDURES

ADMISSION REQUIREMENTS

All applicants should have:

- A bachelor's degree from a recognized college or university, or the equivalent foreign degree.
- At least a B average (3.00 grade point average on a 4.00 scale).
- Course work suitable for the desired graduate program (applicants with a bachelor's degree but not the necessary course work should consult the Office of Undergraduate Admissions, [414] 288-7302 or [800] 222-6544, or the *Undergraduate Bulletin*, for information about Special Student Status).
- Some programs require professional experience in addition to a bachelor's degree. See the Graduate Programs section of this bulletin for more information.

REQUESTING AN APPLICATION

Requests for application materials are sent to the Marquette University Graduate School, Holthusen Hall, 305, P.O. Box 1881, Milwaukee, WI 53201-1881 or requested by electronic mail at mugs@marquette.edu. A link to our online application can be found at www.grad.mu.edu/future/apply.shtml. Also, a downloadable application in PDF format is available on the Web at www.grad.mu.edu/future/apply.shtml (Adobe Acrobat Reader is required).

PROGRAM INFORMATION

An applicant's program may have special requirements of background, tests, personal statements, other materials, and application deadlines. Check the Graduate Programs section of this

bulletin for information and requirements specific to each program or see requirements on the Web at www.grad.mu.edu/programs/apps.shtml. Applicants are responsible for meeting and submitting all of their program's application requirements.

APPLICATION AND FINANCIAL AID DEADLINES

Applicants are admitted to the Graduate School on the recommendation of the intended department and the approval of the vice provost for research and dean of the Graduate School. Most departments accept applications and will admit applicants at any time if all required materials are received at least six weeks (at least four months for international students) before the beginning of a term. Admission to a program without an application deadline is valid for one year beyond the entry date requested on the Graduate School application.

If the program has an application deadline, all application materials must arrive before that date. Admission to the program is valid only for the term specified on the application, unless a deferral is requested from the Graduate School. A deferral of admission may be requested for up to one year following the original term of admission. Deferral is for admission only; an offer of financial aid may not be deferred. Applicants should check the Graduate Programs section for more information.

Students applying to more than one program must submit a separate application and application package for each program. The first-choice program of interest must be indicated on at least one of the applications. The application fee is paid only once.

The deadline for applying for Graduate School financial aid (including assistantships, fellowships, and scholarships) is February 15 for the following fall term, November 15 for the following spring term and April 15 for the summer sessions. Deadlines falling on weekends or holidays will be extended to the close of the following business day.

IMMUNIZATION AND TUBERCULOSIS SCREENING POLICY

In the interests of keeping individual students and the campus community healthy, effective with the fall 2006 term, all newly admitted or readmitted students (after a two or more year absence from the university) at Marquette University — undergraduate, graduate and professional — are required to provide proof of certain immunizations and to complete a screening instrument for tuberculosis.

Proof of immunization, and/or disease as applicable, is required for MMR (measles, mumps, rubella), Varicella (chicken pox) and Tetanus/Diphtheria. The information should be provided in advance of coming to campus by completing a *Health History Form* and a *Tuberculosis Questionnaire* that will be included in your acceptance packet or sent under a separate mailing by your college or by the Student Health Service. The forms are also available on the Student Health Service Web site at www.marquette.edu/shs. The information must be submitted to the Student Health Service, where it will be retained in confidence.

If a student fails to submit the required documentation within 30 days of the start of the student's first term at Marquette, a registration hold will be placed on future registrations. The hold will be removed once the *Health History Form* and *Tuberculosis Questionnaire* have been received by the Student Health Service and the immunization requirements have been met.

Health Sciences, Nursing and Dentistry students may be required by their department, college or school to receive additional immunizations. Contact your department, college or school for specifications.

INACTIVE FILES

Incomplete and inactive admission files are discarded after one year.

INTERNATIONAL STUDENT REQUIREMENTS

DEFINITION OF AN INTERNATIONAL STUDENT

An international student is defined as an applicant who is not a U.S. citizen or permanent resident.

APPLICATION INSTRUCTIONS

As described in the Application Instructions section later in this bulletin, international applicants are required to submit an application form, a non-refundable application fee, official transcripts with certified English translations, three letters of recommendation, test data (including the TOEFL), and other materials as required by the program to which they are applying.

ENGLISH LANGUAGE ASSISTANCE

All non-native English speaking teaching assistants will be required to take a language placement examination upon their arrival on campus. Based on the results of the exam, students may be required to enroll in one or more English as a Second Language (ESL) courses in addition to

their required course work. ESL courses in writing, reading, listening comprehension, and speaking/pronunciation are offered during the fall and spring terms. (This requirement is in addition to the TOEFL requirement described in the Application Instructions section.) All international students with teaching assistantships (TAs) are also required to attend a one-week orientation program, where they are evaluated individually in language and communication skills before beginning course work.

FINANCIAL VERIFICATION AND VISA REGULATIONS

Upon acceptance to the Graduate School, F-1 students must adequately document their financial resources for the duration of the academic program before a visa will be issued. Financial verification, in the form of an appropriate sponsorship statement and an advance deposit (in U.S. currency) equal to the amount of the first term's tuition, must be sent to Marquette before the certificate of eligibility for a visa will be issued. Students wishing to have their I-20 express mailed to them must put their request in writing and submit it along with the required advance deposits and financial verification paperwork. The added cost for express mail requests will be subtracted from the advance deposit. The express mail charge is non-refundable. The premium for the first term of health and repatriation insurance, required of all F-1 and J-1 students, will be deducted from the advance deposit. Students must be prepared to pay any remaining balance of the first term's tuition when they arrive on campus. The advance deposit will be waived if the student receives a scholarship or other academic award that covers the cost of the first term's tuition. If a student chooses not to attend Marquette University after the I-20 has been issued, all but \$10 (U.S. currency) will be refunded. A written request for a refund must be sent back to the Graduate School with the original I-20.

International students must abide by the regulations of their legal status in the United States regarding their defined educational objectives, academic load, and employment. Most international applicants are eligible only for regular degree status. Those seeking admission for non-degree status must obtain a statement of their legal eligibility from Marquette's Office of Campus International Programs.

APPLICATION INSTRUCTIONS

The Graduate School requires the following information from all master's and doctoral program applicants. Read the list carefully and follow the directions exactly. **Applications will not be reviewed for admission until all materials, including those requested by the proposed graduate program, have been received.** Submit all application materials by mail to: Marquette University Graduate School, Holthusen Hall, 305, P.O. Box 1881, Milwaukee, WI 53201-1881; or by courier to: Marquette University Graduate School, Holthusen Hall, 305, 1324 W. Wisconsin Ave., Milwaukee, WI 53233.

SELF-COMPLETED APPLICATIONS

Students are strongly advised to submit the application for admission and all required documents at once, in one envelope. Letters of recommendation and any unofficial transcripts must be in sealed envelopes with the signature of the issuing person/institution across the back flap. Official GRE/GMAT/TOEFL scores must come directly from the Educational Testing Service. However, applicants who have an unofficial copy of the score report are advised to submit it with all other documents. The score report will be considered unofficial until verified by ETS.

ALL APPLICANTS MUST SUBMIT THE FOLLOWING:

- A completed application form.
- A \$40 non-refundable application processing fee (*U.S. currency only*).
Note: Application fee is waived for Marquette University alumni.
- A letter notifying the Graduate School if the last name (family name) on the transcripts or test scores is different from the name on the Graduate School application.
- Official transcripts:

Official transcripts detailing previous academic study from all universities or colleges attended, embossed with the school seal, must be sent directly from the issuing institution to the Graduate School. Applicants with course work in progress toward the fulfillment of a degree are required to submit an official final transcript verifying receipt of their degree after completing the course work. All applicants who have transcripts in a language other than English must provide official transcripts accompanied by certified English translations.

Applicants who previously attended Marquette University need not request Marquette transcripts but are required to furnish transcripts from other schools they attended, if applicable.

Because students may need copies of their transcripts sometime during their course of study, they should request two sets of official transcripts when preparing their application — one to be submitted to the Graduate School and the other for future personal use.

- **Letters of recommendation:**

Applicants should check the Graduate Programs section of this bulletin for information about the number of letters of recommendation needed, if any. Letters of recommendation should comment on the applicant's past academic record and potential for future success. Most programs do not require special forms or format. However, the nursing, counseling, counseling psychology, and educational psychology programs require special forms for recommendation submission. Letters of recommendation must be sent directly to the Graduate School by the author or institution, or be delivered in sealed envelopes with the author's signature across the back flap.

Applicants applying for financial aid through the Graduate School must submit three letters of recommendation and check the financial aid area on the application (see the Financial Aid section of this bulletin).

International students must submit three letters of recommendation even if they are not applying for financial aid. These letters should be sent directly to the Graduate School by the author or institution, or be delivered in sealed envelopes with the author's signature across the flap. Letters from former professors or administrators of their former institutions are preferred.

- **Permission to discuss the applicant's file with a third party (optional):**

Applicants who are unable to speak directly with an admissions counselor (due to distance, expense, etc.) may give the Graduate School permission to communicate with a third party. Marquette University requires that this request be made in writing, be signed by the applicant, and specify the name(s) of the third party.

- **Additional application materials as requested by the program:**

It is the applicant's responsibility to obtain information about these requirements from the Graduate Programs portion of this bulletin or from the director of graduate studies for the proposed program.

- **Test Data:**

One or more of the following tests may be required as part of the admission process. Consult the Graduate Programs section of this bulletin or the program requirements at www.grad.mu.edu/programs/apps.shtml for information specific to the applicant's proposed program. Regardless of the test, all scores must be sent directly from the issuing source to the Graduate School.

Preparation books for these tests can be found at the public library and various bookstores. Free downloads of preparation materials are also available at www.mba.com for the GMAT and at www.gre.org for the GRE. A variety of tests, including the GRE (General Test only), the GMAT and the TOEFL, are administered locally at Prometric Testing. Call (262) 796-0836 or (800) 967-1100 for more information.

The Graduate School urges applicants to take tests well in advance of the date the scores are needed. It usually takes at least six weeks for scores to reach the Graduate School office after the exam. Test scores should be relatively recent; scores more than five years old (two years for TOEFL) may not be accepted.

Graduate Record Examination (GRE)

Most graduate programs request a GRE (General Test) score. Applicants are urged to complete this test either in the senior year of undergraduate work or before filing an application for admission. Departments may require applicants to take a "Subject" (advanced) GRE Test. Consult the Graduate Programs section of this bulletin for specific information. For information about this test, contact the Educational Testing Service, P.O. Box 6000, Princeton, NJ 08541-6000. Visit the Web site www.gre.org or call (609) 771-7670 or (866) 473-4373 for more information.

Test takers must enter the code 1448 in the Score Report Recipient section of the GRE registration form. It is not sufficient to list Marquette as the undergraduate institution. Failure to enter the correct code will delay the admission decision.

Graduate Management Admission Test (GMAT)

The GMAT is required for admission to the business administration and accounting master's programs. For information about this test, contact the Graduate Management Admission Council®, 1600 Tysons Blvd., Ste. 1400, McLean, VA 22102. Visit www.mba.com or call (800) 717-GMAT (4628) for more information.

Millers Analogy Test (MAT)

This test may replace the GRE for admission to some programs. Check with the Graduate Programs portion of this bulletin for additional information.

Those on or near a college campus should contact the student counseling center, testing service, or similar office on that campus to arrange for testing. If applicants live near Marquette University, they may make arrangements with the associate director of the Marquette University Counseling Center located in Holthusen Hall, 204. The telephone number is (414) 288-7172. The applicant may also request a list of test centers from Harcourt Assessment Inc., 19500 Bulverde, San Antonio, TX 78259, call (800) 211-8378, or look online at www.miller-analogies.com. Test scores must be reported directly to the Graduate School.

Test of English as a Foreign Language (TOEFL)—*International Students Only*

International students whose language of instruction for their bachelor's degree education (or master's, if applicable) was not English must take the TOEFL. International students should have an adequate command of both written and spoken English, usually evidenced by a TOEFL score of at least 550 on the paper-based version and 213 on the computer-based version. (Minimum scoring for the new Internet-based version is still being established.) Applicants for some programs must test with higher minimums and should consult the Graduate Programs section of this bulletin for specific information.

Test scores may not be more than two years old. For information about this test, contact TOEFL Services, Educational Testing Service, P.O. Box 6151, Princeton, NJ 08541-6151. Visit www.toefl.org or call (609) 771-7100 for more information.

MASTER'S DEGREE PROGRAM

The master's degree is awarded in recognition of academic accomplishment as demonstrated by a program of course work, passing of the required examinations, and the preparation of a thesis, project, or essay.

ADMISSION REQUIREMENTS

Only applicants whose total record indicates that they can make independent, original and high quality contributions to knowledge will be admitted. Departments reserve the right to limit the number of students accepted within a given time period.

APPLICATION PROCEDURES

Applicants must follow the instructions beginning on page 9. It is the applicant's responsibility to obtain information about additional application requirements from the Graduate Programs section found in this bulletin or from the director of graduate studies for the proposed program.

MASTER'S DEGREE REQUIREMENTS

FOREIGN LANGUAGE REQUIREMENTS

Some programs require fluency in one or more foreign languages. This requirement is used as an important tool to advance the scholarly and research efforts of the student. To determine foreign language requirements for a specific master's program, consult the Graduate Programs section of this bulletin. If required, students must select one (or more) language in which there is significant scholarly literature in their program field.

To fulfill the foreign language requirement, students must pass the foreign language test administered by Marquette University and may be required to demonstrate a reading knowledge of the selected foreign language(s) early in their studies. Details concerning the administration of the foreign language test are available from the department offices.

COMPREHENSIVE EXAMINATIONS

Candidates for a master's degree in many departments must successfully pass a comprehensive examination on their total graduate program of studies. If a student fails a major section of the examination, the entire examination is considered to be a failure. This will cause the department to review the student's record, and, if warranted, a second and final examination will be given.

Each department administers its own comprehensive exams. Students are encouraged to contact their program for specific information including deadlines and procedures. A department may require students to complete a specific course instead of passing a comprehensive exam. Generally speaking, this course may be taken only after the student has completed all of the other core course requirements.

PLAN A AND PLAN B

The Graduate School offers the master's degree under two plans: Plan A, which requires that the student write a thesis, and Plan B, which substitutes additional course work, a professional project or essay instead of the thesis. Some master's programs allow students to choose either Plan A or Plan B. For plans offered in each program, consult the Graduate Programs section of this bulletin.

Students may submit a petition to the Graduate School requesting a change from Plan A to Plan B (or vice versa) providing they have permission from their program and the Graduate School. The *Master's Program Change of Plan Form*, available in the Graduate School office, must be completed and returned to the Graduate School.

If a student changes plans after completing some or all of the required thesis or project courses, these credits may not automatically apply toward the new degree requirements.

THESIS AND PROFESSIONAL PROJECT OUTLINE FORM

Students must submit an outline for the proposed thesis or professional project. (No outline is required for writing a master's essay.) The outline must be approved by the student's adviser, the department chairperson, and the vice provost for research and dean of the Graduate School. Master's thesis and professional project outline forms are available at the Graduate School office or online at www.grad.mu.edu/forms.

THESIS AND PROFESSIONAL PROJECT DIRECTIVES FORM

Directions for writing a thesis, professional project or master's essay are available at the Graduate School office or online at www.grad.mu.edu/forms. Students are strongly encouraged to read the directives thoroughly and to check with their department for additional guidelines, if any, *before* starting. The Graduate School updates the directives forms periodically and students are responsible for using the most recent version. Theses, professional projects or master's essays that do not conform exactly to the most recent directives will not be accepted by the Graduate School.

RESEARCH INVOLVING HUMANS OR ANIMALS

A student whose thesis or professional project involves research either on or with humans or animals must receive written approval before undertaking such research. The approval forms for human or animal research may be obtained through the Office of Research Compliance. This approval form and any additional paperwork must be submitted to the Graduate School. Additional information may be found in the *Thesis and Professional Project Directives* or at www.marquette.edu/researchcompliance.

EARNING A SECOND MASTER'S DEGREE

Students already holding a Marquette master's degree may earn a second Marquette master's degree in another discipline following the same application procedures stated in this bulletin. Other master's program requirements apply, including thesis, project, essay, and comprehensive examination.

During the first term of study for a second master's degree, students must plan, with their adviser, a program of study to include at least thirty credit hours of which at least eighteen must be completed at Marquette. A maximum of twelve semester hours may be transferred from a student's first master's degree at Marquette University and/or another accredited graduate school provided departmental endorsement and Graduate School approval are obtained (see Transfer of Credit).

PLAN A — MASTER'S DEGREE WITH THESIS**MINIMUM CREDIT REQUIREMENTS**

A minimum of 30 credit hours is required including six hours of thesis credits and a minimum of 18 credit hours of the course work must be taken in the major field. Some departments may require additional semester hours; students should consult the Graduate Programs section of this bulletin for more information. At least one-half of the minimum total course program (twelve credit hours in most programs, exclusive of thesis credits) must be taken at the graduate level (200-course number or above). In the major field, at least one-half (nine credit hours) of the minimum course program must be taken at the 200-course level or above. The remaining courses may be selected from among those undergraduate courses that are eligible for graduate credit.

THESIS CREDITS

Students must register for six hours of thesis credit but may not do so until the thesis outline has been approved. Students who enroll in, and pay for thesis credits before actually beginning work on their project will not be entitled to a refund of tuition for these credits even if they should subsequently drop out, withdraw from their program, or transfer to a Plan B option.

MASTER'S THESIS

In a master's thesis, students demonstrate familiarity with the tools of research or scholarship in their major field, show thorough knowledge of the subject covered, and reflect independence of thought, critical insight and originality. The thesis must also be acceptable in style and composition. Students are required to follow the instructions on the *Thesis and Professional Project Directives*, available from the Graduate School office or online at www.grad.mu.edu/forms. A thesis that does not conform to the directives, including format specifications, will not be accepted by the Graduate School.

The original and two copies of the completed master's thesis must be submitted on or before the deadline listed in the Academic Calendar. Although the student holds the copyright of the thesis, the thesis is considered a public document by Marquette University and may be placed in the Marquette University library, used by students and faculty, or otherwise released to the public.

PLAN B — MASTER'S DEGREE WITHOUT THESIS

MINIMUM CREDIT REQUIREMENTS

A minimum of 30 credit hours is required and a minimum of 18 credit hours of the course work must be taken in the major field. Some departments require more semester hours; students should consult the Graduate Programs section of this bulletin. At least one-half of the minimum total course program (fifteen credit hours in most programs, exclusive of professional project credits) must be taken at the graduate level (200-course number or above). The remaining courses may be selected from among those undergraduate courses that are eligible for graduate credit. Consult individual program listings and department advisers to determine the specific requirements for Plan B programs.

PROFESSIONAL PROJECT CREDITS

Departments may require students to register for three hours of project credit or similar course work. Students may not register for project credits until their project outline has been approved. Students who enroll in, and pay for project credits before actually beginning work on their project will not be entitled to a refund of tuition of these credits even if they should subsequently drop out of or be withdrawn from their programs.

PROFESSIONAL PROJECT

In a project, students demonstrate familiarity with the tools of research or scholarship in the major field, show thorough knowledge of the subject covered, and reflect independence of thought, critical insight and originality. The project must also be acceptable in style and composition. Students are required to follow the instructions on the *Thesis and Professional Project Directives*, available from the Graduate School office or online at www.grad.mu.edu/forms. A project that does not conform to the directives, including format specifications, will not be accepted by the Graduate School.

An original bound copy is submitted to the Graduate School office on or before the deadline listed in the Academic Calendar. Although the student holds the copyright of the finished project, the project is considered a public document by Marquette University and may be placed in the Marquette University library, used by students and faculty, or otherwise released to the public.

ESSAY

In many graduate programs, a master's essay may be required even though no formal credit is given for it and no outline is required. Students should confer with their advisers about topics and guidelines for producing an acceptable paper, including requirements for length and references. The final copy of the essay and *Essay Approval Form* with appropriate signatures must be submitted to the Graduate School office on or before the date listed in the Academic Calendar. Essays must also be acceptable in style and composition. Students are required to follow the instructions on the *Thesis and Professional Project Directives*, available from the Graduate School office or online at www.grad.mu.edu/forms. An essay that does not conform to the directives, including format specifications, will not be accepted by the Graduate School. The university or its departments retain final approved copies of essays for use by the public as reference or instructional materials.

DOCTORAL DEGREE PROGRAM

The doctor of philosophy (Ph.D.) degree is awarded in recognition of high attainment and ability in a special subject field. Candidates are required to pass examinations that cover general and specific knowledge in their area of expertise, and prepare and successfully defend a dissertation based on original research that makes a significant contribution to the field.

Faculty from both doctoral and non-doctoral departments may propose interdisciplinary Ph.D. programs for individual students to the University Board of Graduate Studies. This provides students and faculty with opportunities for creative academic programming and research opportunities that cross traditional disciplinary boundaries. Since there is no departmental structure to support these programs, certain understandings, commitments, and restrictions, beyond those required in regular doctoral programs, are necessary. Additional information appears later in this bulletin. Direct specific questions to the Graduate School or relevant department chairperson.

ADMISSION REQUIREMENTS

Admission requirements for the doctoral degree are substantially higher than those for a master's degree. Only applicants whose total record indicates that they can make independent, original and high-quality contributions to knowledge will be admitted. Doctoral students are not admitted on a probation status. Departments may require that students obtain a master's degree before beginning doctoral studies. For more information, check the Graduate Programs section found in this bulletin or with the director of graduate studies for the proposed program. Departments reserve the right to limit the number of students accepted within a given time period.

APPLICATION PROCEDURES

Applicants must follow the instructions beginning on page 9. It is the applicant's responsibility to obtain information about additional application requirements from the Graduate Programs section found in this bulletin or from the director of graduate studies for the proposed program. Students with master's degrees from Marquette are required to submit a new application to the Graduate School if they wish to be considered for doctoral admission.

DOCTORAL DEGREE REQUIREMENTS

CREDIT REQUIREMENTS

Depending on previous preparation and the nature of the research undertaken, the number of credits required for individual students, even within the same program, may vary considerably. Students entering the doctoral program with a master's degree are required to complete a minimum of 30 semester hours of course work, exclusive of dissertation credits. These 30 hours must be taken at Marquette or permission secured from the student's department and the Graduate School for an exception. Students starting a doctoral program with a baccalaureate degree typically must complete a minimum of 60 semester hours of course work, exclusive of dissertation credits.

FOREIGN LANGUAGE REQUIREMENTS

Some programs require fluency in one or more foreign languages. This requirement is used as an important tool to advance the scholarly and research efforts of the student. To determine foreign language requirements for a specific doctoral program, consult the Graduate Programs section of this bulletin. If required, students must select one (or more) language(s) in which there is significant scholarly literature in their program field.

To fulfill the foreign language requirement, students must pass the foreign language test administered by Marquette University. Students may be required to demonstrate a reading knowledge of the selected foreign language(s) early in their studies. Details concerning the administration of the foreign language test are available from the department offices. All foreign language requirements must be fulfilled before a student may take the Doctoral Qualifying Examination.

DOCTORAL PROGRAM PLANNING FORM

Students must prepare a program of study, with their adviser, that lists the steps and classes needed to complete their doctoral degree. The *Doctoral Program Planning Form*, available at the Graduate School office or online at www.grad.mu.edu/forms, is used for this purpose. The approved *Doctoral Program Planning Form* constitutes a formal agreement between the student and Marquette University and, once established, may be changed only by formal amendment. It

should be submitted to the Graduate School no later than the end of the student's first year. Course work, foreign language and residency requirements are accepted as part of a student's doctoral program only after approval of the *Doctoral Program Planning Form*.

SPECIALIZATIONS/MINOR AREAS OF STUDY

A specialization (or sub-plan), normally consisting of twelve credits of course work in a specific field, may be required for some doctoral programs. When a specialization is required, it must be selected from those offered within approved Marquette University programs and must be a minor area of study recognized by the Office of the Registrar. A minor area of study must be outlined on the *Doctoral Program Planning Form*. For additional information, consult the Graduate Programs section of this bulletin.

RESIDENCY REQUIREMENT

The residency requirement is designed to immerse doctoral students in the campus community of scholars. It must be satisfied in the department in which the student is seeking a doctoral degree. The residency requirement is met when a student completes nine credits of course work, or its equivalent per term, for two terms within an 18-month period, or alternatively, completes at least 6 credits of course work, or its equivalent per term, for three terms within an 18-month period. Plans for the residency must be included on the *Doctoral Program Planning Form*. The credit load necessary to meet the six- or nine-credit requirement may be met by course work alone or course work in conjunction with dissertation credits and/or Continuous Enrollment (departmental seminars will be sufficient to satisfy the course work requirement). However, the requirement may not be met via Continuous Enrollment credits alone, dissertation credits alone, or a combination of Continuous Enrollment and dissertation credits.

DOCTORAL QUALIFYING EXAMINATION

The DQE is an exploration of the student's understanding in the program field and may be written, oral, or both. It may also include an explanation of the proposed dissertation. Required elements for the DQE are defined by the student's program department. The DQE is typically scheduled after all course work, language and residency requirements have been completed. Taking the DQE before all requirements have been satisfied requires written permission from the student's department and the Graduate School.

The exam is conducted by a committee made up of at least three faculty members from the student's program. (If the committee includes a non-Marquette member, the department must note this exception in writing, submit a request and a curriculum vitae for that person to the Graduate School.) Some departments require students to pass cumulative examinations. For more information, consult the Graduate Programs section of this bulletin.

Students who fail the examination may take a second examination, if warranted, after fulfilling all conditions stipulated by the doctoral examining committee. If the second examination is unsatisfactory, no further examination is permitted.

OFFICIAL DOCTORAL CANDIDACY

Students advance to doctoral candidacy upon recommendation of their department, having completed all course work, language, and residency requirements, and passing the DQE. A student cannot advance to candidacy status until all requirements, as listed on the *Doctoral Program Planning Form*, have been satisfied.

DISSERTATION PROCESS

ASSEMBLING A DISSERTATION COMMITTEE

Candidates select their dissertation committee with the assistance of their adviser. The names of at least three members including the chairperson of the student's three or more member dissertation committee must be on the *Outline for Dissertation, Thesis, or Professional Project* form, available online at www.grad.mu.edu/forms. If the committee includes a non-Marquette member, the department must submit a recent curriculum vitae for that member to the Graduate School with their *Outline for Dissertation* form.

DOCTORAL DISSERTATION OUTLINE FORM

Students must submit an outline for the proposed dissertation on the *Outline for Dissertation* form, typically within the first term that dissertation credits are taken. Outlines must be approved by the student's adviser, the department chairperson, and the Graduate School. If the proposed research involves a real or apparent conflict of interest on the part of the student, the dissertation director, or the committee members, it must be declared at the time the outline is submitted.

RESEARCH INVOLVING HUMANS, ANIMALS OR RADIOISOTOPES

A student whose dissertation involves research with humans, animals or radioisotopes must receive written approval before undertaking such research. The approval forms for human, animal or radioisotope research may be obtained through the Office of Research Compliance. This approval form and other required paperwork must be submitted to the Graduate School. Additional information may be found on the *Dissertation Directives* or at www.marquette.edu/researchcompliance.

DISSERTATION CREDITS

Students must register for 12 hours of dissertation credits and may enroll for these while working on their doctoral dissertation outline. Each department determines the number of credit hours that a candidate may take during any one term. Students who enroll in, and pay for, dissertation credits before actually beginning work on their project will not be entitled to a refund of tuition of these credits even if they should subsequently drop out of or are withdrawn from their program.

DISSERTATION DIRECTIVES

Directions for writing the dissertation are available at the Graduate School office and online at www.grad.mu.edu/forms. Students are strongly encouraged to read the directives thoroughly and to check with their departments for additional guidelines, if any, *before* starting. The Graduate School updates the directives forms periodically and students are responsible for using the most recent version. Dissertations that do not conform exactly to the most recent directives will not be accepted by the Graduate School.

WRITING THE DISSERTATION

A dissertation demonstrates a student's familiarity with the tools of research and scholarship in the field, shows thorough knowledge of the subject covered, and reflects independence of thought, critical insight and originality. The dissertation must exhibit the student's mastery of the literature of the subject and familiarity with the sources, and be presented with a satisfactory degree of literary skill. Students are required to follow the instructions on the *Dissertation Directives*. Dissertations not conforming to the directives, including format specifications, are not accepted by the Graduate School.

The original and one copy of the completed dissertation must be turned into the Graduate School office by the date listed in the Academic Calendar inside the back cover of the *Graduate Bulletin*. Please consult the *Dissertation Directives* for a complete list of forms and other requirements that must be turned in to the Graduate School at the time of submission of the dissertation. Although the student retains copyright privileges, approved dissertations are considered the property of Marquette University. Bound or microfilm copies may be made available to the public at the Marquette University library.

PUBLIC DEFENSE OF THE DISSERTATION

A public defense of the dissertation is conducted after the candidate has completed all other formal requirements for the doctoral degree. The vice provost for research and dean of the Graduate School appoints an examining committee with three or more members for each candidate. Although the examination is primarily a defense of the dissertation, it will include material relevant to the general field in which the dissertation is written, with particular attention to the more recent and significant developments.

The candidate and adviser select a date, during weekday working hours and avoiding public or religious holidays, for the public defense of the dissertation. If the student wants to graduate the same term the defense is made, the defense must be held before the deadline listed in the Academic Calendar. Candidates prepare the *Announcement for Public Defense of the Dissertation* form (instructions included in the *Dissertation Directives*) along with an abstract. All committee members must sign this form indicating their agreement to the date of the public defense.

At least four weeks prior to the scheduled date for the dissertation defense, the student must submit a dissertation defense program (instructions are included in the *Dissertation Directives*) to the Graduate School. The program must be accompanied by an abstract and a signed *Announcement for Public Defense of the Dissertation* form, available online at www.grad.mu.edu/forms.

POLICIES OF THE GRADUATE SCHOOL

ACADEMIC COURSE LOAD

The maximum academic course load for a graduate student is thirteen semester hours of course work for fall or spring term. Seven hours are the maximum permitted for each of the summer sessions but no more than 13 credits for the entire summer term. Teaching or research assistants may register for a maximum of ten semester hours each fall or spring term and seven hours for each of the summer sessions. Overloads must have the approval of the Graduate School on the *Credit Overload Request Form*, available in the Graduate School office.

ACADEMIC STATUS

Every graduate student, except those with non-degree status, must be enrolled as a full-time, half-time, or less than half-time student each fall and spring term to maintain his or her status. All degree graduate students must enroll in either: adviser-approved course work; thesis, professional project, or dissertation credits; one of the continuous enrollment courses; or a combination of the above. Degree students who fail to enroll for every fall and spring term must apply for readmission to their program. (See Readmission.)

A **full-time** graduate student is defined as one who: a) registers for seven or more credit hours of cumulative* course work in one or more modules of a fall term, spring term or summer term, or b) registers in the departmental 893 continuous enrollment course.

A **half-time** graduate student is defined as one who: a) registers for four or more but fewer than seven credit hours of cumulative* course work in one or more modules of a fall term, spring term or summer term, or b) registers in the departmental 892 continuous enrollment course.

A **less-than-half-time** graduate student is defined as one who: a) registers for fewer than four credit hours of cumulative* course work in one or more modules of a fall term, spring term or summer term, or b) registers in the departmental 891 continuous enrollment course.

* "Cumulative" means adding all credits taken in all sessions within any **one** term.

Note: During fall and spring terms, if a student takes credits only during part of the term, the status is effective only for the period that the student is registered, not for the entire term. For the summer term, the status attained applies to the entire term regardless of the session(s) in which the credits are taken.

ADMISSION STATUS

Marquette University admits graduate students under four different categories: degree, non-degree, temporary and visiting scholar status.

DEGREE STATUS

When applicants are admitted to a program leading to a master's or doctoral degree, they are said to be in "degree status." This designation is made after the department and the Graduate School have accepted an application. An applicant may be admitted into one of two categories.

Regular degree status — Designates a student who is admitted to the Graduate School and is working towards a master's or doctoral degree in a particular program. Students are eligible for tuition scholarships, graduate assistantships and fellowships.

Probationary degree status — This status is awarded to master's degree students only by the applicant's department or the Graduate School. Probationary status is assigned when an applicant's academic performance falls below Graduate School standards but there is other evidence to suggest the potential for successful graduate level study. Students admitted on probation are not eligible to receive financial aid from the Graduate School but may apply for financial assistance from the Office of Student Financial Aid. Probationary status is typically removed upon completion of nine semester hours of work with an average grade of B or above, with at least one-third of the course work having been completed at the 200 course level. For M.B.A. students, this work must include one core course. Students failing to have their probationary status removed after completing nine semester hours are not permitted to remain in the Graduate School.

NON-DEGREE STATUS

This status designates any student taking graduate-level classes who is not seeking a master's or doctoral degree. Students in a certificate program or visiting scholars are in this category. Non-

degree students are not eligible to receive financial aid from the Graduate School or from the Office of Student Financial Aid except for Catholic Schools Personnel Scholarships and the Milwaukee Area Teachers Scholarships.

All applicants are required to submit an application, the application fee, certified copies of transcripts and other information as requested by the department. Non-degree applicants seeking admission to degree status must meet the same admission standards as other applicants to a degree program.

Completion of any number of non-degree credits **does not guarantee** acceptance into a degree program, and, if a non-degree student is subsequently admitted to a degree program, there is no guarantee that credits earned while in non-degree status will count toward the degree. Most degree programs accept no more than twelve credits taken as a non-degree student.

Credits earned as a non-degree student may be considered as graduate credits and certified as such to school boards or other authorities. Non-degree students may register for any course (with the exception of courses in dentistry) if they have met the prerequisites and have department permission. Non-degree students interested in taking courses in dentistry must have special permission from the Graduate School and the School of Dentistry.

Probationary status — This status is awarded by the applicant's department or the Graduate School. Probationary status is assigned when an applicant's academic performance falls below Graduate School standards but there is other evidence to suggest the potential for successful graduate level study. Probationary status is typically removed upon completion of nine semester hours of work with an average grade of B or above, with at least one-third of the course work having been completed at the 200 course level. Students failing to have their probationary status removed after completing nine semester hours are not permitted to remain in the Graduate School.

TEMPORARY ADMISSION STATUS

Applicants who have applied to a degree or a non-degree program, and meet the minimum admission requirements but have not submitted all the necessary documents may be admitted under temporary status. This admission is valid for only one term. Students must apply for and be admitted as a degree or non-degree student before being allowed to register for additional courses. Exceptions are rarely made to this policy.

VISITING SCHOLAR STATUS

This status designates a student, seeking a master's or doctoral degree at another institution, who takes one or more classes at Marquette University with the intention of transferring the earned credits. Evidence of the student's status and academic performance at the other institution will be required, although submission of official transcripts may not be necessary.

Visiting scholars may apply for federal financial aid through the student's home school or through Marquette. Students applying for aid through Marquette must request a Consortium Agreement from the Office of Student Financial Aid. When the completed form is returned to Marquette, the student will become eligible for federal financial aid and the Office of Student Financial Aid will process the student's FAFSA. Students applying for federal aid through their home institutions should consult their home institutions for their application policies and procedures.

ADVISING

The Graduate School sends the name and telephone number of an academic adviser to each student in a degree program with the letter of admission. A student is required to meet or talk with the adviser before registering for classes. The Graduate School strongly recommends that students meet regularly with their advisers; an adviser plays an important role in the graduate student's course of study. An adviser's signature is required on most forms submitted to the Graduate School and a student's program of study is not valid until it has been approved by both the adviser and the Graduate School. Students who want to change advisers should check with their department for additional information and instructions.

Non-degree and temporary graduate students are normally not assigned academic advisers. Students in these categories who need assistance should contact the department in which they will focus their course of study.

APPEALS

In the Graduate School, the final responsibility to resolve student appeals rests with the vice provost for research and dean of the Graduate School (or, when delegated, the assistant vice

provost for graduate studies), advised by the University Board of Graduate Studies. Possible matters of appeal include, but are not limited to, terminations from programs, disenrollments, graduation decisions, and accusations of academic dishonesty. Before an appeal is made to the Graduate School, every effort must have been made to resolve the matter informally, and appeal procedures at the program level must have been exhausted.

Appeals to the Graduate School must be made in writing to the vice provost for research and dean of the Graduate School within 30 days of notification of the action being appealed. The appeal must be specific and substantiated for the vice provost for research and dean of the Graduate School to appoint a committee to hear the appeal. During an appeal, the student must maintain graduate status. This status is maintained through either course work or continuous enrollment at the discretion of the Graduate School or the student's graduate program.

GRADE APPEALS

All grade appeals shall be heard for the Graduate School by the school or college that teaches the course, following the rules of that school or college. Their decision is final, and no further appeal is available. In schools or colleges with a departmental structure, the appeal procedure usually begins with the department chairperson.

CONTINUOUS ENROLLMENT

All degree graduate students must enroll in either: adviser-approved course work; thesis, professional project, or dissertation credits; one of the continuous enrollment courses; or a combination of these every fall and spring term until graduation to maintain their graduate student status.

Continuous enrollment courses allow those in non-credit academic work such as thesis, project or dissertation research or writing, examination preparation, practica, etc., to be considered full-, half-, or less-than-half-time students.

All three types of continuous enrollment status (full-, half-, and less-than-half-time) must be requested in writing via the *Continuous Enrollment Registration Form*. When full- or half-time continuous enrollment status is requested, it must be justified and explained on the *Continuous Enrollment Registration Form*, available online at www.grad.mu.edu/forms. The student's academic adviser or department chairperson must verify and approve the non-credit academic work. The student's transcript will reflect the continuous enrollment status.

The continuous enrollment course options are:

Full-time status: Departmental course 893.

The fee is \$100

Half-time status: Departmental course 892.

The fee is \$100

Less-than-half-time status: Departmental course 891.

The fee is \$100

CONTINUOUS ENROLLMENT DEADLINES

The deadline for continuous enrollment registration is the last day of Late Registration. The *Continuous Enrollment Registration Form* must be approved by the student's adviser and department, and the student must have registered for the course on or before that date.

Continuous enrollment registrations received after the close of registration are treated as applications for readmission and will *not* appear on the students' official records. Students submitting a late *Continuous Enrollment Registration Form* should note that requests for information provided through the Office of the Registrar (such as enrollment verification requests from lending institutions, insurance companies, etc.) will not reflect the continuous enrollment status. Students who are not registered for classes or a continuous enrollment course for one or more consecutive fall or spring terms must apply for readmission to their program. Readmission is possible only with departmental endorsement and providing a readmission fee of \$100, and all continuous enrollment fees in arrears are paid.

CONTINUOUS ENROLLMENT PROCEDURES

Students enrolling in continuous enrollment course 891, 892, or 893 must register to activate their desired status. All continuous enrollment classes, which are graded on the S/U basis, require the consent of the student's department which must be secured prior to registering. Follow these procedures:

1. The student and his/her adviser meet, complete the *Continuous Enrollment Registration Form* and request the section that is most appropriate to the student's needs. An explanation of the student's involvement in non-credit academic work is required.
2. The student will be given a permission number to be used during the registration process.
3. Completed and approved forms shall be delivered to the Graduate School.
4. Students are billed by the Office of the Bursar for the continuous enrollment fee.

DEADLINES

All degree and non-degree graduate students are responsible for ascertaining and meeting all deadlines listed in the Academic Calendar. This includes, but is not limited to, deadlines for registration, withdrawing from courses, financial aid applications, graduation applications, comprehensive exams, theses, essays, projects and dissertations.

ENROLLMENT CHANGES

Changes in a graduate student's enrollment are under the jurisdiction of the Graduate School. Most enrollment changes, i.e., adding and withdrawing from courses, can be done using the online registration system. Instructions for adding or withdrawing from courses are available at www.marquette.edu/registrar.

After late registration each term, the student must notify the Graduate School office directly and complete appropriate forms before any enrollment change will become effective. It is **not** sufficient for a student to notify the course instructor or someone in the department office.

ADDING COURSES

Students who wish to add one or more courses after the close of late registration must contact the Graduate School office to obtain a *Request to Add a Course* form. New courses will not be added to a student's enrollment until a completed *Request to Add a Course* form, with the signature of the course instructor, is returned to the Graduate School office. Normally, courses must be added within one week of the first day of classes. Requests to add courses after the first week of classes may require, in addition to *Request to Add a Course* form, a letter from the instructor outlining arrangements for making up any missed assignments and the approval of the vice provost for research and dean of the Graduate School.

WITHDRAWING FROM (DROPPING) COURSES

Students who, after the close of registration, decide to withdraw from one or more, but not all, courses in a particular term or summer session must notify the Graduate School office and obtain a *Request to Drop a Course(s)* form from either the Graduate School office or online at www.grad.mu.edu/forms. (See also *Withdrawing From All Courses*, below.) It is extremely important that the student contact the Graduate School office as soon as the decision to withdraw is made. **Tuition refunds** (refer to Refunds and Adjustments) **and W** (Withdrawal) **grades will be based on the date that the student notifies the Graduate School office, not on the date that the student last attended classes.**

A student who wishes to withdraw from a course with a W (Withdrawal) grade must do so before the deadline date listed in the Academic Calendar. Due to excessive absences or other reasons, including failure to formally withdraw before the deadline, a student may be administratively withdrawn from a course and incur a grade of either UW (Unexcused Withdrawal) or F (Failure).

Students are urged to go to the Graduate School office in person to obtain the necessary forms and receive complete withdrawal instructions. If, however, work commitments or other serious inconveniences prevent students from appearing in person, they may call the Graduate School office at (414) 288-7137 for assistance, and the date of the call will be considered the date of notification. Regardless of whether students notify the Graduate School of the withdrawal in person or by phone, changes will not be processed or be considered official until the appropriate forms, with all required signatures, are returned to the Graduate School office.

When withdrawing from any portion of a course load, students must carefully consider the ability of their remaining enrollment to satisfy any enrollment requirements to which they might be subject due to applications for student loans, loan repayment deferments, visas, etc.

WITHDRAWING FROM ALL COURSES

Students enrolled for one or more classes who, after the close of registration, decide to discontinue study for the term must notify the Graduate School office and complete a *Request to Drop a Course(s)* form. The same rules, procedures, and cautions for partial withdrawals also apply to complete withdrawals. (Refer to *Withdrawing From Courses*, above.) Withdrawing from all courses will not automatically withdraw a student from a graduate program, but it might affect the student's eligibility to register in subsequent terms.

GRADING SYSTEM

The following letter grades and their achievement equivalents are used by instructors in the Graduate School to evaluate a student's performance in a course. Grade points corresponding to each letter grade determine a student's academic average and eligibility to graduate. Each grade, A through F, has a specific grade point value. The grade points earned in any course equal the grade point value of the grade multiplied by the number of semester hours credited. The grade point average (G.P.A.) is found by dividing the total grade points earned by the total number of semester hours credited in those courses for which grade points have been assigned. Determination of the cumulative G.P.A. will be based on all courses taken during the student's graduate career, including prerequisite and repeated courses, if any. Note: Credits that are accepted for a Marquette degree, if transferred from another university, will not be included when calculating the student's grade point average.

All graduate students must maintain a grade point average of at least 3.00 to graduate. (For the effect of BC, C, F, UW and U grades, refer to Academic Review.) Graduate students may not be assigned a CD or a D grade in any course whatsoever, including undergraduate courses. Normally, graduate courses are not repeated for a higher grade.

<i>Grade</i>	<i>Achievement</i>	<i>Grade Points</i>
A	Excellent	4.00
AB		3.50
B	Satisfactory	3.00
BC		2.50
C	Minimally acceptable on a limited basis for graduate credit	2.00
CD	Not approved for graduate students	
D	Not approved for graduate students	
F	Failure	0
Grade points are not affected by the following grades:		
W	Withdrawal (before withdrawal deadline)*	
UW	Unexcused Withdrawal	
S/U	Satisfactory/Unsatisfactory**	
CR	Completed Requirement of enrollment in a course that carries no credit	
Au	Audit***	
I	Incomplete	
PI	Permanent Incomplete	
X	Missed Examination	
IX	Both Incomplete and Missed Examination	

*Signifies an official withdrawal with the approval of the vice provost for research and dean of the Graduate School.

**Refer to S/U Grading, below.

***Carries no graduate credit. Students must register for the course as auditors, attend class meetings regularly, and fulfill such other requirements as may be assigned in writing by the course instructor no later than the second meeting of the class after registering for audit.

Note that grades of CD and D are not approved for graduate students, including those in undergraduate courses.

S/U GRADING

Under no circumstances may the undergraduate S/U option be exercised by a graduate student taking an undergraduate course for graduate credit. Further, graduate students required to take undergraduate courses as prerequisites or to remedy deficiencies may not take those courses for S/U grades, as this option is not available.

However, a few select graduate courses are offered for S/U grades only. S/U graded courses are different than S/U option. Courses of this type usually are limited to practica, department colloquia, or special seminar courses. Students should check the individual course descriptions in this bulletin and the grading basis when conducting a class search in CheckMarq to determine whether a course is offered on this basis.

For the effect of U grades, refer to Academic Review.

GRADE CHANGES

There are two types of grade adjustments: changing a temporary grade (X, I, or IX) to a permanent grade, and correcting a permanent grade.

TEMPORARY GRADES — X, I, OR IX

Graduate students who do not complete course requirements during the term in which the class is offered may be given one of the following temporary grades after consultation with their instructor: X, when one or more examinations are missed; I, when the course work has not been completed; or IX, a combination of missed examinations and incomplete course work.

The faculty member must submit a grade change form to change an X, I, or IX to a permanent grade, or the student must submit the *Request for Extension of I Grade Deadline* form, found at www.grad.mu.edu/forms. Whichever path is chosen, the applicable form must be submitted to the Graduate School before the grade change deadline listed in the Academic Calendar, which is approximately six weeks into the next fall or spring term. For X, I, or IX grades accrued during the summer session, they must be changed before the deadline date which is approximately six weeks into the next fall term.

It is the responsibility of the student to be aware of the deadline and to submit outstanding academic work to the instructor in time to allow the work to be graded and the grade to be changed. However, it is the responsibility of the faculty member to initiate the grade change procedure once all remaining academic work has been submitted. Grades of X, I, or IX that are not resolved by the deadline will become permanent grades on the student's record. A permanent grade of I will be reflected as a grade of PI on the student's record.

CORRECTING A PERMANENT GRADE

Changing a permanent grade because of miscalculation on the part of the instructor or a misunderstanding between the instructor and the student, may be initiated by either the student or the instructor. Changing a permanent grade should be done within six months of the end of the term.

GRADUATE CREDIT

A student can earn graduate credit for a course only if a) the course has been approved for graduate credit *and* b) he or she has been accepted, through an official letter of admission, into the Graduate School. Students taking courses while in non-degree status may request the transfer of credits to their degree program (see Transfer of Credit).

Graduate credit may be earned for undergraduate 100-level courses identified as “upper division courses” in this bulletin (and denoted in Class Attributes when conducting a class search in CheckMarq). Extra work beyond that expected for undergraduate credit is required of students wishing to earn graduate credit for these 100-level courses. Graduate students who take an upper division course but do not want to receive graduate credit for it must advise the Graduate School office, in writing, before beginning the course.

No student may register for a 200- or 300-level course unless he or she has been admitted to the Graduate School or has the approval of the student's home college and the department offering the course.

GRADUATION

All students must apply for graduation by the deadline specified in the Academic Calendar during their last term. Application forms are available online at www.grad.mu.edu/forms. Graduation deadlines are scheduled well in advance of the date of Commencement to allow time for printing diplomas, graduation invitations, and program booklets. Students who submit applications after the stated deadline cannot be guaranteed a diploma dated for that graduation date nor can they be assured of inclusion in the graduation program booklet.

The awarding of a degree is contingent upon the student's successful completion of all program requirements prior to the date of graduation. A cumulative grade point average of 3.00 or above is also required to graduate. **If a student fails to graduate at the time originally anticipated, he or she must reapply online for the next graduation before the appropriate deadline stated in the Academic Calendar.**

Students who have completed all of their degree requirements prior to a specific graduation date, but who have missed the graduation application deadline, may request a letter from the Graduate School certifying the completion of their program. The student must still apply for graduation and the diploma will reflect the next graduation date.

CEREMONY

A Baccalaureate Mass, Commencement ceremony and individual graduation programs take place at the end of each spring term in May. At the end of each fall term in December, a Baccalaureate Mass, Graduation ceremony, and some individual graduation programs take place

(contact your program for details on any individual graduation programs in December). The program-specific graduation exercises are intended to recognize and honor each graduate individually. The format for these activities will be up to the individual college or school. Students are expected to attend the graduation ceremony but may petition the vice provost for research and dean of the Graduate School to be excused. Master's and doctoral students who complete their degree requirements for an August graduation are invited to participate in the preceding May graduation ceremony (doctoral students must have successfully defended the dissertation, and submitted a final copy of the dissertation with all required changes, all signature pages, and the *Dissertation Approval Form*). This can only occur if the *Graduation Application* is completed by the April date listed on this bulletin's Academic Calendar, and the necessary arrangements have been made with the graduate student records coordinator in the Graduate School.

DIPLOMAS

Diplomas are typically distributed at the May Commencement ceremonies. Any special arrangements for the mailing of May diplomas, etc., must be made directly with the Office of the Registrar. August and December diplomas are available for pick up or can be requested by mail from the Office of the Registrar. The Office of the President sends invitations to the names indicated on the *Graduation Application* each graduating student submits online to the Graduate School. However, there is no limit to the number of family members and friends who may attend the Commencement exercises; tickets are not needed. For further information contact University Special Events at (414) 288-7431 or visit www.marquette.edu/pages/home/news/graduation.

INDEPENDENT STUDY

Independent Study (295) courses provide students the opportunity to study and investigate areas of interest not available through normal course offerings. A 295 course is taken on the recommendation of the student's adviser and with the approval of the department chairperson. An approval form, which must be completed for each 295 course, is available in the Graduate School office. Normally, no more than six credits of 295 course work can be included in a master's degree program, no more than nine credits in a doctoral program.

INTER-UNIVERSITY VISITATION

Marquette University participates in two programs, detailed below, by which its students may take courses at another university or college in order to expand the breadth of their education.

MARQUETTE-UWM AND MARQUETTE-MEDICAL COLLEGE OF WISCONSIN

Marquette University has agreements with both the University of Wisconsin–Milwaukee and with the Medical College of Wisconsin. The course being taken at the host institution must not be available at Marquette. In no case will more than six credits taken at UWM or MCW be counted toward degree completion at Marquette, unless the courses are taken as part of a joint program. The students must apply for admission to the host institution as a special student; the application fee is waived. A Marquette student must complete an *Inter-University Exchange Course Approval and Manual Registration Form*, found online at www.grad.mu.edu/future/MUandUWM.shtml (for UWM) or www.grad.mu.edu/future/test1.shtml (for MCW), then get their adviser's approval, and finally submit the completed form to the Graduate School. This will register the student for the course GRAD 201 (UWM course) or GRAD 202 (MCW course), both of which are variable title and variable credit courses that reflect the title and number of credits of the course at the host institution. The student must also register for the courses at the host institution. Tuition is paid at the home institution for the GRAD 201 or GRAD 202 course. The course at the host institution is tuition-free. Only degree-seeking graduate students in good standing are eligible to participate. *This program is not intended for students in joint programs such as bioinformatics, biomedical engineering, and healthcare technology management, where the courses between Marquette and MCW are cross-listed.* Interested students should contact the Graduate School office for additional information and enrollment forms.

MIDWEST CATHOLIC GRADUATE SCHOOLS CONSORTIUM

The consortium of Midwest Catholic Graduate Schools (MCGS), which includes Loyola University, Chicago, Ill.; Marquette University, Milwaukee, Wis.; University of Notre Dame, South Bend, Ind.; and St. Louis University, St. Louis, Mo.; has established the protocol whereby a degree-seeking student at one university may take course work at any of the other three universities to apply toward degree requirements at the *home* institution.

With prior approvals, the student enrolls at the *home* institution and makes financial arrangements there, but attends classes, on a short-term basis, as a visiting student at the *host* univer-

sity. Final grades are forwarded from the host to the home university for listing on the student's permanent record. The following restrictions apply: 1) Participation is restricted to those fields of study which are under the academic jurisdiction of the graduate deans at both the home and the host institutions; 2) Non-degree or temporary students may not participate; 3) The degree-seeking student must have completed at least the equivalent of one full term at the home university before visiting one of the other institutions; 4) A student may gain approval for more than one visitation at more than one host institution, but no more than nine credit semester hours of courses from host institutions can become part of a degree program at the home institution.

To participate, a student must complete, for **each** course to be taken at a host institution, an *Inter-University Visitation Enrollment Form* and an *Inter-University Exchange Course Approval and Manual Registration Form*, both of which require signatures of approval. Because of the paperwork involved and the number of approvals that must be obtained, the student must begin the inter-university visitation application process no later than June 1 for a fall term visitation, October 1 for the spring term, or March 1 for summer sessions. Interested students should contact the Graduate School office for additional information and enrollment forms.

LEAVE OF ABSENCE

Graduate degree students who must temporarily discontinue their graduate studies for one or more terms may qualify for an official leave of absence. *Students are urged to be extremely cautious in requesting a leave of absence.* During the leave period, students do not have enrollment status for purposes such as health insurance, loan deferment, or access to academic facilities on campus, such as library and computer services.

Only written requests that include specific information about why the leave is being requested and the expected date of return will be considered. There is no guarantee that a request will be granted. All leaves must be approved by the department director of graduate studies or chair, and by the vice provost for research and dean of the Graduate School.

The time taken during a leave of absence is included as part of the six years students have to complete their master's or doctoral program. Students resuming their studies after a leave of absence who are unable to complete their program within the six-year time limit must request an official extension of time (see Time Limitations).

READMISSION

Students who have withdrawn from the university, failed to enroll for one or more academic-year terms, were administratively withdrawn from their program, or who were suspended for any reason must be formally readmitted to the Graduate School before resuming their studies. To be readmitted, students must receive departmental endorsement, complete a new *Application for Graduate Admission and Financial Aid* form, and pay all continuous enrollment course fees in arrears. The vice provost for research and dean of the Graduate School and the major department jointly decide if a student will be readmitted.

In being readmitted, students face the possibility that previously completed work might not be accepted with the readmission decision, even if taken within the same program. The major department and vice provost for research and dean of the Graduate School may also set readmission conditions on the student's resumption of work toward a degree such as registering for additional course work, retaking examinations, completing the degree within in a specified time period, or other appropriate terms.

Requests for readmission from students who have been suspended will be based on many considerations including the applicant's ability, evidence of growth and maturity, credits earned at another institution, and time elapsed since leaving Marquette.

TIME LIMITATIONS

Students must complete all requirements for a master's or doctoral degree within six years of their first term of registration in the program. For students in a master's program, the six-year period begins from the date of transfer work completed at another institution or a previous Marquette graduate program.

Students who are unable to complete their degree within the six-year limit may petition the Graduate School for an extension; *Request for Extension of Time* forms are available online at www.grad.mu.edu/forms. To ensure timely consideration, the *Request for Extension of Time* form should be filed early in the term in which the time limit expires. If the extension is approved, the student is notified of the expectations for progress and completion of the degree. If the extension is denied, the student is terminated from the graduate program.

Failure to complete the program or to obtain an approved extension of time may result in the student's being administratively withdrawn from the program. These students must follow the guidelines for readmission (see Readmission).

TRANSFER OF CREDIT

Limits are placed on the number of credit hours that may be transferred from other institutions in order to protect the integrity of the Marquette degree programs. Only credits directly applicable to a student's Marquette degree program will be considered for transfer, and there is no guarantee that these will be approved. Credits that are accepted for a Marquette degree, if transferred in from another university, will not be included when calculating the student's G.P.A. However, credits taken at Marquette in another program, if accepted for transfer into a degree program, will be included in the student's G.P.A. Only courses in which a grade of B or above has been earned may be transferred for credit into a master's program or used on a *Doctoral Program Planning Form*. Students are strongly urged to consult their advisers before requesting or taking any course for which they will want to transfer credits.

MASTER'S PROGRAMS

Normally, six credit hours of approved graduate work from an outside master's program will be transferred with the consent of the vice provost for research and dean of the Graduate School and the department chairperson. Upon recommendation of the department and concurrence by the vice provost for research and dean of the Graduate School, a maximum of 12 credit hours or one-third of the program's credit hour requirement for course work (exclusive of thesis), whichever is smaller, may be transferred. A student can anticipate a maximum transfer of credit only in unusual or compelling circumstances. Under no circumstances will Marquette accept more than 12 credit hours from another institution toward a Marquette master's degree. Credits approved for transfer will have been earned within the previous six years and will affect the time limits for completing a Marquette program.

Only credits for courses directly comparable in content to the requirements of the current degree program will be considered for transfer, and no credits will be considered until the student has completed the *Master's Degree Transfer of Credit Request* form, found online at www.grad.mu.edu/forms. The student must also have met the following conditions: 1) completed six credits (nine credits if admitted on probation) as a degree-status student in his or her Marquette master's program; 2) taken the courses requested for transfer at the graduate level and for graduate credit; 3) earned a grade of B or above in each of the courses; and 4) official transcripts are on file from the institutions involved, if other than Marquette.

Credits approved from a school using a quarter system will transfer as two-thirds credit each when converted to Marquette's term system. Semester credit equivalents for transfers from schools using a trimester system will vary by school and must be evaluated individually. Students who are less than one credit short of graduation requirements after such transfers will need no additional course work. Students short one full credit or more for graduation must take additional course work.

Graduate level credits earned at Marquette, as a degree student in a different graduate program or as a non-degree student, may transfer following the same request and approval procedures outlined above. Students are responsible for initiating this process. Credits transferred between Marquette programs or statuses are included as part of the 12-credit transfer limit.

DOCTORAL PROGRAMS

Graduate credits both from other institutions and from Marquette are accepted for a doctoral program when a *Doctoral Program Planning Form* is approved. Most master's-level or other graduate-level course work from an accredited program in a field directly related to the current doctoral program will be accepted. Normally, 30 graduate credits taken prior to enrollment in the doctoral program at Marquette may be applied to the Marquette program. These credits must be specified on the *Doctoral Program Planning Form*.

Doctoral-level credits taken at another university are considered on an individual basis, in consultation with the student's adviser, the department, and the Graduate School, for acceptance into a Marquette program. Any graduate student contemplating additional course work to be transferred from another institution is urged to seek prior approval from the department and the Graduate School and should have the course(s) and the institution(s) listed on the *Doctoral Program Planning Form*. Credits from another institution accepted into a Marquette doctoral program on the *Doctoral Program Planning Form* typically will not appear on the student's official Marquette transcript.

UNDERGRADUATE STUDENTS IN GRADUATE COURSES

An undergraduate senior may, with the permission of his or her home college and the department offering the course, register for a 200-level graduate course if the student has a B (3.00) or above average. To register for a graduate course, the undergraduate student must complete the *Permission to Enroll in a Graduate Course* form, available online at www.grad.mu.edu/forms. Once all signatures of approval have been obtained and the student has received the permission number from the department offering the course, the completed form shall be forwarded to the Graduate School. The student must then register for the course online through CheckMarq.

An undergraduate student who enrolls in an upper division (100-level) course (any of those designated for graduate credit in the *Snapshot of the Schedule of Classes*) with the intention of earning graduate credit that might, subsequently, be transferred to a graduate program, must complete the *Permission to Enroll in a Graduate Course* form following the above instructions. The course cannot be taken under the S/U option.

POLICIES OF MARQUETTE UNIVERSITY

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.

CONDUCT

ACADEMIC CONDUCT AND PROFESSIONAL INTEGRITY

To function properly and maintain high standards, academic and professional disciplines expect members to adhere to standards of conduct and professionalism. Marquette expects its graduate students, from the beginning of their work at Marquette, to demonstrate the utmost personal integrity and the highest standards of professionalism, including adherence to any commonly recognized codes of conduct or professional standards in the graduate student's discipline. In dealing with the public or campus community, in clinics, practica, internships, classrooms or elsewhere, graduate students must adhere to these standards. Violations of these standards may be grounds for dismissal or other penalties.

ACADEMIC DISHONESTY

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

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

ACADEMIC REVIEW

Every academic unit evaluates the academic performance of its graduate students at the close of each term, adhering to the standards of the Graduate School and any additional standards promulgated by the unit. Graduate students must maintain a grade point average of at least 3.00 in all course work, including prerequisites and other course work that does not apply to the degree. Students who fall below 3.00 in any given enrollment period but who maintain a 3.00 cumulative grade point average will be sent a letter of warning from the Graduate School. Students who fall below a 3.00 cumulative grade point average or receive a grade of F or U in any of their courses will be placed on academic probation. A student who fails to achieve a 3.00 grade point average during an enrollment period while on academic probation or fails to achieve

a cumulative 3.00 grade point average after a second academic probationary period will be automatically dismissed from the university. Satisfactory academic work is not, however, determined exclusively by course grades. All degree graduate students, including those registered in Continuous Enrollment courses, must make substantial and visible progress toward their degrees. This includes successful completion of such program requirements as a language examination, a comprehensive or qualifying examination, a thesis or dissertation outline, the thesis or the dissertation. All students in professional, laboratory, or clinical settings must maintain fully professional behavior at all times. If, in the judgment of the academic unit, a student is not living up to the non-academic standards, either a warning letter will be issued by the department to the student, or a recommendation will be made to the vice provost for research and dean of the Graduate School that the student be dropped from the graduate program.

ACADEMIC STANDING

Non-degree and degree seeking graduate students must maintain a cumulative grade point average of at least 3.00 to satisfy university requirements. These are minimum standards for graduate courses; individual programs may specify more stringent standards to which students will be held by the programs. Students are responsible for awareness of these standards which are listed in the program sections of the *Graduate Bulletin* and in handbooks or Web pages provided by the programs. Students enrolled in the professional programs of dentistry, law, physician assistant studies, and physical therapy are subject to the standards stated within their programs.

GOOD STANDING

A graduate student is in good standing whenever the student's cumulative grade point average is at least 3.00.

WARNING

Whenever the grade point average for any enrollment period is less than 3.00, but the overall grade point average is 3.00 or above, the student will be notified in writing of failure to meet academic standard requirements.

ACADEMIC PROBATION

If a student's cumulative grade point average falls below 3.00, or if the student receives a grade of F or U, the student will be placed on academic probation for the next enrollment period. At the discretion of the academic unit, an additional period of academic probation may be granted if the student has earned a 3.00 or above during the period on academic probation, but the cumulative grade point average remains below 3.00.

ACADEMIC PROBATION REMOVED

When the conditions of Good Standing are restored, academic probation will be removed.

DISMISSAL

Students placed on academic probation who fail to earn at least a 3.00 grade point average in the subsequent enrollment period, or who fail to achieve a 3.00 cumulative grade point average while on a second academic probationary period, will be dismissed from the university. Upon receiving a dismissal notice based upon academic grades, a student may appeal the decision directly to his or her department through the mechanism designated by the department. The decision of the department is final.

Dismissed students may apply for readmission through the normal admission process. A period of one semester may be required by the academic department before readmission will be considered. If so required, the department may specify conditions that must be met during this period.

The student must send a written request for readmission to the assistant dean of the Graduate School who will, in turn, forward the student's file to the academic program for review and a recommendation on readmission. The request for readmission must include a statement by the student addressing previous weaknesses, steps taken to correct the weaknesses, and an explanation of why the student feels he or she has the ability to succeed in graduate studies.

The student's transcript will not indicate the semesters the student has been on academic probation but will indicate dismissal if such should occur. If the student is subsequently granted readmission, the grade point average will continue from the previous calculation and the student must obtain a 3.00 grade point average after a new sequence of academic probation.

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, perform-

ing, 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 research misconduct are subject to the guidelines within the research misconduct policy. However, students who are accused of academic dishonesty not relating to research will be under the jurisdiction of other existing university policies. The research misconduct policy can be found on the Web via the site www.marquette.edu/orsp/policies/upp.shtml.

STUDENT CONDUCT CODE AND PROCEDURES

Graduate students are responsible for complying with the regulations and/or procedures of the Graduate School as well as those set forth in the *At Marquette* student handbook. Violations of regulations found in the student handbook will be administered by the Office of Student Development. Copies of *At Marquette* are available at the Office of Student Development or online at www.mu.edu/osd/policies/atmarquette.html. If there is a conflict between the two applicable regulations or procedures, the Graduate School's will govern. If there are multiple components to the case, they may be separated and reviewed independently by the appropriate authorities.

CONFIDENTIALITY OF PROPRIETARY INFORMATION

The university recognizes that the primary purpose of research and scholarship is to train future scholars and disseminate new knowledge for the benefit of humankind. However, commercially valuable inventions and discoveries also may result. Graduate students, during the course of their studies and work at the university, may receive access to confidential or proprietary information from the university, its faculty and employees, and/or private companies. A student, both while a student and thereafter, is expected to respect and maintain the confidentiality of such information. In certain unusual cases, a student may be asked to sign an additional confidentiality agreement. Unauthorized use or dissemination of another's confidential or proprietary information is subject to appropriate legal recourse and/or academic discipline, including termination from the program.

INTELLECTUAL PROPERTY

Students will acquaint themselves with the university's Intellectual Property Policy, which is found at www.marquette.edu/orsp/policies. Marquette University students are subject to the policy when, working for pay or for academic credit, they participate in faculty research programs.

FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT

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

SUMMER STUDIES

During the summer term, Summer Studies offers graduate and selected undergraduate courses that may be taken for graduate credit. These courses are applicable to degrees in all colleges and schools of the university in the following modular formats: two consecutive six-week sessions and four additional sessions longer than the traditional six-week format. Several of the six summer sessions offer short courses varying in length.

M.B.A. courses are offered on and off the Marquette campus during several sessions within the summer term. Domestic and foreign travel programs are offered each summer and provide graduate students with an exciting off-campus study experience. Summer Studies provides an opportunity for graduate students to complete needed course work or accelerate their graduate programs of study.

For information, contact the Office of the Registrar, Summer Studies, Marquette University, Marquette Hall, 310, P.O. Box 1881, Milwaukee, WI 53201-1881; call (414) 288-7506; fax (414) 288-1773; e-mail summerstudy@marquette.edu; or visit the Summer Studies Web site at www.marquette.edu/summer.

ADMISSION TO SUMMER STUDIES

Detailed information on admission to Summer Studies may be found in the *Summer Studies Bulletin* (regularly published during February and sent upon request). For information, contact the

Office of the Registrar, Summer Studies, Marquette University, Marquette Hall, 310, P.O. Box 1881, Milwaukee, Wisconsin 53201-1881; call (414) 288-7506; fax (414) 288-1773; e-mail summerstudy@marquette.edu; or visit the Summer Studies Web site at www.marquette.edu/summer.

TUITION, FEES AND HOUSING

PAYMENT POLICY

Payment of tuition and other fees is due in full approximately 15 days prior to the beginning of classes for the fall and spring terms. **A STUDENT'S REGISTRATION IS NOT COMPLETE UNTIL ALL TUITION, FEES AND HOUSING CHARGES ARE PAID.** Students who do not pay in full or enroll in the Marquette Monthly Payment Plan will be subject to a late payment fee assessed at one percent a month on the outstanding balance.

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

PAYMENT OPTIONS

TRADITIONAL SEMESTER PAYMENT

Payment of all tuition, housing and other billed charges is due in full prior to the beginning of each term. Cash and checks are acceptable methods of payment. Payment may also be made electronically (direct debit from checking or savings account) by accessing the Bursar Web site at www.marquette.edu/bursar. Credit card payments may be made with PhoneCharge, Inc. Students will be assessed a convenience fee for each transaction up to \$2,000. To use this service, students should call (877) 685-7794, access the PhoneCharge, Inc. site through the Bursar Web site, or access the PhoneCharge, Inc. site directly at www.paybyinternet.com.

MARQUETTE MONTHLY PAYMENT PLAN

Marquette offers the Marquette Monthly Payment Plan administered by Tuition Pay. The MMPP is intended to cover the costs of fall and spring terms (August through May) and enables a student to budget his or her annual tuition, room and board, and student fee expenses over 10 monthly payments. The Marquette Monthly Payment Plan is not a loan; there are no interest or finance charges. The only cost is a \$90 annual enrollment fee. The 10-month program begins on August 1, 2006. The enrollment form may be completed and submitted online at www.tuition-pay.com/marquette. If you have any questions or would like assistance with enrollment, please contact Tuition Pay at (877) 881-1015.

PAYMENT BY A UNIVERSITY APPROVED THIRD PARTY SPONSOR

Students whose tuition is paid by a university approved third party sponsor must submit their billing authorization to the Office of the Bursar by the payment due date.

NOTE: Students interested in taking a course on an audit basis must first register for the course for credit, then request a change in enrollment status to audit by contacting the Graduate School office. Students must have the proper background and prerequisites for the course in question. Auditors are required to attend all classes and are expected to participate, based on the nature of the course, and/or complete assignments, at the discretion of the instructor. Students who register for an audit course will receive a 50 percent discount on the tuition for that course. This discount is not available to individuals who take the senior citizen discount.

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

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

TUITION

Graduate students are assessed at the per credit hour rate based on their academic plan for all registered courses, graduate or undergraduate.

Graduate	\$750.00
Business Administration	750.00
Executive Business Administration (per program)	
(\$1,000 deposit billed in fall term for new students)	
Continuing students (graduating December 2006)	
billed \$10,625 fall 2005, \$9,625/term spring, summer, fall	\$39,500.00
New students (graduating December 2007)	
billed \$11,375 fall 2006, \$10,375/term spring, summer, fall	\$42,500.00
Education Graduate students with an academic plan of:	
COEP, COPS, COUN, EDUC, EDPL and EDPS	560.00
Dental Graduate students with an academic plan of:	
Dental biomaterials (per credit hour)	950.00
Endodontics, orthodontics, and prosthodontics: flat rate applies (see below).	
Flat rate:	Endodontics Orthodontics Prosthodontics
Summer term	7,520.00 6,115.00 5,110.00
Fall term	15,040.00 12,230.00 10,220.00
Spring term	15,040.00 12,230.00 10,220.00
Language reading courses (non-credit),	
Cost per course/Audit only	480.00*
English as a Second Language courses,	
Cost per credit hour	600.00**
Pre-M.S.N. phase for M.S. program for Non-Nursing Graduates	
15-month program charged as follows:	
Continuing students (graduating August 2006)	
billed \$7,152 for summer 2006	\$7,152.00
New students (start summer 2006) billed \$7,522 summer terms,	
\$11,283 fall/spring terms	\$37,610.00

*Special rate; no other discounts apply.

**Tuition waived for Teaching Assistants.

CONTINUOUS ENROLLMENT FEES*

Part Time: 891 or 892	\$100.00
Full Time: 893	100.00

*Applicable to all graduate programs.

SERVICES FEES

Application Fee	\$40.00
Diploma Mailing Fee – Domestic	10.00
Diploma Mailing Fee – International	15.00
Doctoral Dissertation Publication Fee	65.00
Examination, Comprehensive, for each attempt beyond the first	15.00
Examination, Marquette Foreign Language Test, for each	
attempt beyond the first	15.00
Examination, Special or Delayed	25.00
Late Payment Fee (per month)	1% (12% APR)
Readmission Fee	100.00
Master's Thesis Binding Fee	25.00
Transcript Fee	
per transcript	3.00
immediate service (per transcript)	10.00
additional charge per international transcript	1.00

HOUSING

The Office of University Apartments & Off-campus Student Services (UAOCSS) can assist graduate students with finding appropriate housing in the Marquette University neighborhood. UAOCSS publishes the *Tenant Guide*, an annual listing of properties in the Marquette neighborhood that provides information such as contact numbers, amenities, rent rates, and utilities

included. Current and prospective students may request a *Tenant Guide* from the office via e-mail at muuaocss@marquette.edu or by phone at (414) 288-7281. UAOCSS is located at 1500 W. Wells Street and is open Monday through Friday from 8:00 a.m. to 4:30 p.m.

MEAL PLANS

Meal plans are available for purchase through the Office of Residence Life, and are automatically renewed for the second term unless cancelled through the office.

Traditional 19	\$1,525
Traditional 14	1,415
Block 175	1,465
Block 125	1,340

REFUNDS AND ADJUSTMENTS

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

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

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

Tuition Refund and Adjustment Schedule

100% refund	Through late registration
80% refund	During the second week
60% refund	During the third week
40% refund	During the fourth week
20% refund	During the fifth week
No refund	After the fifth week

NOTE: Graduate students who enroll in, and pay for, thesis or dissertation credits before actually beginning work on their projects will not be entitled to a refund of tuition for these credits if, for any reason, they do not complete their programs.

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

FINANCIAL AID

Both merit-based and need-based financial aid is available to graduate students at Marquette University. The Graduate School offers and administers merit-based aid such as teaching assistantships, research assistantships, tuition scholarships, and a variety of fellowships. The university's Office of Student Financial Aid offers and administers need-based financial aid such as loans and federal work-study employment, and non-need based aid such as student work opportunity employment and private employment.

Students may opt to pay for their studies in a variety of ways. In addition to merit- and need-based aid, they may use their personal funds, sign up for the Marquette Monthly Payment Plan offered by the Office of the Bursar, receive assistantships funded by faculty members' grants, or apply for outside scholarships and fellowships. Numerous funding options are listed and regularly updated in the financial aid section of the Graduate School's Web site.

MERIT-BASED COMPETITIVE ASSISTANTSHIPS, SCHOLARSHIPS, AND FELLOWSHIPS FUNDED BY THE GRADUATE SCHOOL

Students applying for merit-based aid must:

- Be admitted to degree programs (exceptions are made for the Catholic Schools Personnel Scholarships and the Milwaukee Area Teachers Scholarships).
- Be registered as full-time students (exceptions are made for the Catholic Schools Personnel Scholarships and the Milwaukee Area Teachers Scholarships).
- Not be admitted on probation.
- Maintain 3.00 grade point averages (term and cumulative). Failure to do so may result in the withdrawal or discontinuation of their aid.

Awards are made on the basis of academic record and scholarly promise. Factors used in determining this aid include the applicants' transcripts, letters of recommendation, GRE, GMAT, MAT scores, and academic backgrounds. Financial need is not a factor.

MERIT-BASED COMPETITIVE ASSISTANTSHIPS, SCHOLARSHIPS, AND FELLOWSHIPS FUNDED BY THE GRADUATE SCHOOL

PROGRAM	ELIGIBILITY	AMOUNTS	APPLICATION PROCESS
Alpha Sigma Nu Graduate Scholarship	Members of Alpha Sigma Nu	Up to an 18 credit tuition scholarship. Renewable for a second year depending on fund availability.	Apply by the February 15. Contact the Graduate School's Financial Aid Coordinator for more information.
Milwaukee Foundation's Frank Rogers Bacon Research Assistantship	Master's and doctoral students in the Department of Electrical Engineering.	\$12,500 stipend and variable tuition scholarships for the 2006–2007 year.	Interested students should write to the chairperson of the Department of Electrical and Computer Engineering.
Adelaide & Hubert Booz Scholarship in Neuropsychology	Graduate students in counseling and educational psychology	Amount varies depending upon fund availability.	Nominations are made by Dept. of Counseling and Educational Psychology.
R.A. Bournique Memorial Fellowship	Summer research support for graduate students in chemistry.	Amount varies depending upon fund availability.	Applicants should contact the Department of Chemistry for information.
John Braig Family Scholarship in Theology	Provides scholarship funds in varying amounts to students, particularly seminarians and members of religious orders, who are enrolled in theology graduate courses.	\$2,000 stipend, though amount may vary depending upon fund availability.	Eligible students will be invited to apply.
Catholic Schools Personnel Scholarship Program Scholarship (affiliated with the Kopmeier Family Milwaukee Foundation) <i>(online applications accepted at www.grad.mu.edu/finaid/forms)</i>	Teachers, administrators and other professionals employed by Catholic elementary and secondary schools in the Archdiocese of Milwaukee.	Two-thirds of tuition scholarship for three credits per term.	Applications are available from the Graduate School and online. Fall deadline June 15; Spring deadline November 15; Summer deadline April 15.
Dominican Sisters of Sinsinawa Graduate Education Award	Catholic Sisters of the Dominican Order of the Sinsinawa Province. Under special circumstances, funds may be available to other Catholic students.	Stipend for living expenses and/or tuition.	Recipients are authorized by the Superior of the Order.
G.E. – Marquette Medical Systems, Inc. Scholarship	Graduate students in healthcare technologies management.	Amount varies depending upon fund availability.	Nominations are made by Dept. of Healthcare Technologies Management.
Graduate Assistance in Areas of National Need (GAANN) program sponsored by the U.S. Department of Education	Ph.D. students in biomedical engineering, electrical engineering, or biological sciences.	Tuition scholarship up to 18 credits plus an annual stipend of up to \$30,000 depending on need.	Applicants should contact departments for availability and application information.
Graduate Student Organization Graduate Assistantship	Graduate students in at least the second year of their programs.	Awards include a \$12,090 stipend and a tuition scholarship up to 18 credits.	Application procedures are announced each spring for the following fall term.
Patricia C. Janz Scholarship	Need- and character-based scholarship for students in Counseling and Educational Psychology.	Amount varies depending upon fund availability.	The Department of Counseling and Educational Psychology make nominations to the Graduate School.
Jesuit International Scholarship	Jesuits from countries other than the U.S.	Tuition scholarship up to 18 credits.	Contact the Graduate School or the rector of the Jesuit community.
Richard W. Jobling Fellowship	Master's and doctoral students in biology, chemistry, mathematics, biomedical engineering, civil engineering, electrical engineering or mechanical engineering.	Up to a \$2,000 stipend to supplement an assistantship.	Nominations are made to the Graduate School by the individual graduate units.

PROGRAM	ELIGIBILITY	AMOUNTS	APPLICATION PROCESS
Johnson's Wax Research Fellowship	Doctoral-level fellowship available for students in electrical and computer engineering (2006-2007), biomedical engineering (2007-2008), mechanical engineering (2008-2009), chemistry (2009-2010) and biological sciences (2010-2011).	Stipend of approximately \$5,500.	Nominations are made to the Graduate School by the appropriate department.
Paul A. Ketterer Scholarship	Master's students in the public service program.	Amount varies depending upon fund availability.	Institute for Urban Life will invite students to submit applications.
Marquette Minority Fellowship	Minorities underrepresented in American graduate education (African Americans, Hispanics, and Native Americans). Must be a U.S. citizen.	For 2006-2007, a minimum stipend of \$6,045 and a nine-credit scholarship. The student's department is strongly encouraged to supplement this award and to provide support in subsequent years.	Nominations are made to the Graduate School by the individual graduate units.
Leslie G. & Cecile C. Matthews Scholarship	Students in all graduate programs who demonstrate financial need.	Amount varies depending upon fund availability from 1 to 9 credits per semester.	The various graduate programs make nominations to the Graduate School.
Maurice L. Madden Biomedical Engineering Fellowship	Graduate students in biomedical engineering.	Financial assistance usually in the form of a stipend.	Nominations are made to the Graduate School by the Department of Biomedical Engineering.
Marquette University Women's Club Fellowship	Students who received the baccalaureate degree at Marquette University.	\$2,000 stipend.	Nominations are made to the Graduate School by a different graduate unit each year.
Milwaukee-Area Teachers Scholarships <i>(online applications accepted at www.grad.mu.edu/forms)</i>	Elementary and secondary school teachers in the Milwaukee area.	One-half tuition scholarships up to three credits per term.	Request application from Graduate School. Fall deadline February 15; Summer deadline April 15; Spring deadline November 15.
Denis J. O'Brien Fellowship	Students involved in summer study and research in the Departments of Chemistry (2006) and Biological Sciences (2007).	Amount varies depending upon fund availability.	Nominations are made to the Graduate School by the department.
Charles O'Hara Scholarship	Graduate students in biology involved in summer work at Woods Hole, Massachusetts, Cold Spring Harbor Laboratory, or a similar laboratory devoted to the study of biological sciences.	Tuition scholarship.	Nominations are made by the Department of Biological Sciences.
Orthopaedic Human Motion Analysis Fellowship	Advanced graduate students in bioelectronics and biomechanics. Through clinical collaboration with the Department of Orthopaedic surgery at the Medical College of Wisconsin.	Monthly stipend and up to 18 credits tuition scholarship.	Nominations are made to the Graduate School by the Department of Biomedical Engineering.
Jeremiah L. O'Sullivan Fellowship in Public Affairs Journalism	Master's students in journalism with a special emphasis in public affairs journalism.	Stipend and tuition scholarship.	Nominations are made to the Graduate School by the Diederich College of Communication.
Preparing Future Faculty Graduate Assistantship	Graduate students in at least the second year of their programs.	Awards include a \$12,090 stipend and a tuition scholarship up to 18 credits.	Application procedures are announced each spring for the following fall term.

PROGRAM	ELIGIBILITY	AMOUNTS	APPLICATION PROCESS
Reverend John P. Raynor, S.J., Fellowship	Master's and doctoral students. Recipients are expected to be in residence at Marquette and engaged in full-time study.	\$15,000 stipend for doctoral students; stipend up to \$2,000 for master's students to supplement assistantship award; up to 18 credits of tuition scholarship.	Students wishing to be nominated for this fellowship should communicate their interest to their departments by November 15. Nominations from the departments are reviewed in the Graduate School and decisions are usually announced by February 15.
Ann Rehberg End of Life Care Scholarship	Graduate students in the College of Nursing.	Amounts vary depending upon fund availability.	Nominations are made by the College of Nursing.
Research Assistantship (online applications accepted at www.grad.mu.edu/forms)	Full-time students in degree programs.	Stipends begin at \$12,090. In addition, up to 18 credits of tuition scholarship.	Submit application to the Graduate School. The Graduate School does not offer RA awards in the summer. Fall deadline February 15, Spring deadline November 15.
Agnes A. Reinders Scholarship	Full-time graduate students in the College of Nursing.	Amount varies depending upon fund availability.	Contact department chairperson to apply.
Joseph A. and Dorothy C. Rutkauskas Scholarship	Graduate students in the College of Engineering.	\$5,000 award.	Applicants should contact their departments for information.
Arthur J. Schmitt Fellowship	Students in doctoral programs who intend to pursue a career in college teaching.	Stipend of \$12,900 plus a tuition scholarship of up to 18 credits.	Students wishing to be nominated for this fellowship should communicate their interest to their departments by November 15. Nominations from the departments are reviewed in the Graduate School and decisions are usually announced by February 1.
Eugene J. Schumack Memorial Journalism Fund	Graduate students in journalism.	Amount varies depending upon fund availability.	Nominations are made to the Graduate School by the Diederich College of Communication.
Smith Family Fellowship	Doctoral students in history, English, philosophy, and theology who have dissertation topics that require travel out of state to collect data.	Stipend of \$12,900 plus reasonable travel expenses.	Students wishing to be nominated for this fellowship should communicate their interest to their departments by November 15. Nominations from the departments are reviewed in the Graduate School and decisions are usually announced by February 1.
Milo F. Snyder Scholarship in Business	Finance majors in the College of Business Administration's M.B.A. Program.	Scholarship funds in varying amounts.	Nominations are made to the Graduate School by the College of Business Administration.
Lawrence F. & Margaret C. Stollenwerk Scholarship Fund	Students enrolled in Advanced Gerontological Nursing.	Amount varies depending on fund availability.	Contact the College of Nursing for nomination information before June 15.
Earl W. Swokowski Fellowship in Mathematics	Students with teaching or research assistantships in the Department of Mathematics, Statistics and Computer Science.	Summer stipend, or other support, up to \$2,000. The award may also provide support for educational expenses.	Contact department chairperson to apply.

PROGRAM	ELIGIBILITY	AMOUNTS	APPLICATION PROCESS
Teaching Assistantship (online applications accepted at www.grad.mu.edu/forms)	Full-time students in degree programs.	Stipends are \$12,090 to \$17,400 depending upon department and level of award. In addition, up to 18 credits of tuition scholarship.	Submit application to the Graduate School. The Graduate School does not offer TA awards in the summer. Fall deadline February 15; Spring deadline November 15.
Trinity Fellowship	Graduate students in the programs of business, communication, political science, philosophy or public service with prior service in the Peace Corps, Jesuit Volunteer Corps, Americorps, or comparable service. Requires work in a specified social agency.	Stipend approximates Graduate School's teaching assistantship stipend in addition to a tuition scholarship of up to 18 credits.	Contact the director of the Institute for Urban Life.
Tuition Scholarship (online applications accepted at www.grad.mu.edu/forms)	Full-time students in degree programs.	Scholarships up to 18 credits.	Submit application to the Graduate School. Fall deadline February 15; Spring deadline November 15; Summer deadline April 15.
Weis Family Scholarship Fund	Students enrolled in Advanced Gerontological Nursing.	Amount varies depending on fund availability.	Contact the College of Nursing for nomination information before June 15.
Wisconsin Province of the Society of Jesus Grant Fund	Non-Jesuit third-world priests and religious.	Funds awarded as either grants or loans.	Contact the Graduate School.
Dorothy Randles Wood Scholarship	Graduate students in Speech Pathology and Audiology.	Amounts vary depending upon fund availability.	Nominations are made by Speech Pathology and Audiology.
Other merit- and need-based awards for graduate students	A few small endowments support special programs as specified by the donors of the awards.	Small amounts for tuition or living expenses vary depending on earnings of endowments.	The various graduate programs make nominations to the Graduate School.

ASSISTANTSHIPS*

Assistants work a maximum of twenty hours per week in their departments. Outside employment is not allowed without written permission of the student's adviser and the Graduate School. Assistants receive stipends and tuition scholarships up to 18 credits.

TEACHING ASSISTANTSHIPS

TAs assist with various instructional duties. They may function as classroom teachers, lab or quiz instructors, or instructional assistants, and in some cases be assigned primary responsibility for an entire course under the supervision of faculty.

RESEARCH ASSISTANTSHIPS

RAs assist assigned faculty with their research projects.

GRADUATE ASSISTANTSHIPS

GAs perform a combination of TA and RA duties as determined by their departments.

The following graduate programs offer assistantships:

Biological Sciences
Biomedical Engineering
Business Administration
Chemistry
Civil Engineering
Communication
Counseling and Educational Psychology
Economics
Educational Policy and Leadership
Electrical and Computer Engineering
English
Foreign Languages and Literatures
History
Mathematics, Statistics and Computer Science
Mechanical Engineering
Nursing
Philosophy
Physical Therapy
Political Science
Psychology, Clinical
Speech-Language Pathology
Theology/Religious Studies

Refer to the table, found within this section, for more information about assistantships, or view the *Rules and Guidelines for Graduate School Assistantships* on the Graduate School's Web site at www.grad.mu.edu/finaid/merit.

* Programs that do not offer graduate assistantships include: executive M.B.A., direct-entry nursing, dispute resolution, gerontology, law enforcement leadership and management, leadership studies, physician assistant studies, public service, and transfusion medicine. Dental students must contact the associate dean for research and graduate studies at the School of Dentistry for award consideration.

SCHOLARSHIPS*

Many programs offer scholarships to pay for tuition charges. Scholarships do not pay for pre-requisites, audited courses, or non-related degree program courses and fees. They will not pay for more than six thesis or twelve dissertation credits. More information about scholarships is in the *Rules and Guidelines for Graduate School Scholarships* on the Graduate School's Web site at www.grad.mu.edu/finaid/merit.

* Programs that do not offer graduate scholarships include: executive M.B.A., direct-entry nursing, dispute resolution, gerontology, law enforcement leadership and management, leadership studies, physical therapy, physician assistant studies, public service, and transfusion medicine. Dental students must contact the associate dean for research and graduate studies at the School of Dentistry for award consideration.

FELLOWSHIPS

A number of foundations, corporations, individual philanthropists, as well as the university, provide fellowships to Marquette graduate students. Fellowships do not have departmental work obligations, but outside employment is not allowed without the written permission of the student's adviser and the Graduate School. Specific requirements of fellowships are included in award offer letters. Most fellowships require departmental nominations. Refer to the table, found

within this section, for a listing of fellowships and application and nomination requirements. More information about fellowships is on the Graduate School's Web site at www.grad.mu.edu/finaid/merit.

APPLICATION PROCEDURES

New applicants for admission should complete the *Application for Graduate Admission and Financial Aid* and submit **all** admission materials by the application deadline (see below). Applicants for the Catholic Schools Personnel Scholarship must obtain a special paper application from the Graduate School, or they may apply online.

Admitted or continuing students should complete and submit the *Financial Aid Application for Admitted Students* by the application deadline (see below). The form may also be completed and submitted online at www.grad.mu.edu/finaid/forms.

APPLICATION DEADLINES

For priority consideration, applications are due in the Graduate School by 4:30 p.m. on the following dates. Deadlines falling on weekends or holidays will be extended to the close of the following business day.

Fall Term	February 15
Spring Term	November 15
Summer Term	April 15

Some programs may have deadlines for fall admission that are earlier than the financial aid application deadlines. New applicants for financial aid in those programs must adhere to the earlier department deadlines that are listed in the Graduate Programs section of this publication.

RESOLUTION OF THE COUNCIL OF GRADUATE SCHOOLS IN THE UNITED STATES

Marquette University is a signatory to the CGS resolution. The resolution states that acceptance of an offer of financial support (such as a graduate scholarship, fellowship, traineeship, or assistantship) for the next academic year by a prospective or enrolled graduate student completes an agreement that both student and graduate school expect to honor. When a student accepts an offer before April 15 and subsequently desires to withdraw that acceptance, the student may submit a written resignation of the appointment at any time through April 15. However, an acceptance given or left in force after April 15 commits the student not to accept another offer without first obtaining a written release from the institution to which a commitment has been made. Similarly, an offer by an institution after April 15 is conditional on presentation by the student of written release from any previously accepted offer. It is further agreed that institutions subscribing to the CGS resolution will enclose a copy of the resolution with every scholarship, fellowship, traineeship, and assistantship offer it sends prior to April 15.

FINANCIAL AID AVAILABLE FROM THE OFFICE OF STUDENT FINANCIAL AID (OSFA)

Financial aid to help meet the costs of your graduate or professional program can be in the form of scholarships or assistantships, student loans, and part-time employment.

Scholarships and assistantships are awarded by each school or program (dental, law, health sciences or graduate). Questions concerning scholarships and assistantships should be directed to the admissions office or dean's office of the school or program in which you plan to enroll.

Although care is taken to ensure the accuracy and timeliness of information contained in this bulletin, due to constantly changing federal and state legislation, as well as unintended error, the contents are subject to change and/or deletion without notice. Up-to-date information can be obtained by calling the Office of Student Financial Aid.

ELIGIBILITY REQUIREMENTS

To receive financial aid from federal and state programs, students must meet the following requirements:

- Be a U.S. citizen or an eligible noncitizen. Students with F1, F2, J1, or J2 visas are not eligible.
- Be registered with Selective Service, if required.
- Demonstrate financial need, if applying for need-based aid.
- Be enrolled at least half-time. Audit, repeat and other non-credit classes do not apply.

OFFICE OF STUDENT FINANCIAL AID AVAILABLE ASSISTANCE

GIFT ASSISTANCE

PROGRAM	ELIGIBILITY	AMOUNTS	APPLICATION PROCESS
Indian Fellowship Program	<ol style="list-style-type: none"> 1. Enrolled full-time. 2. Certified as Native American by tribe. 3. Must show financial need. 4. Be in post-baccalaureate degree program in one of the approved fields of study. 	Federal government funds program, Indian Fellowship Program selects eligible students and determines amount of each student's fellowship.	<ol style="list-style-type: none"> 1. File the FAFSA. 2. Contact MU Financial Aid Office no later than December prior to the upcoming award year for agency address and phone number. Deadline date changes each year.
American Indian Graduate Center Fellowship Program (AIGC)	<ol style="list-style-type: none"> 1. Enrolled full-time. 2. Certified as Native American by tribe. 3. Must show financial need. 4. Must be in post-baccalaureate program. 	Federal government funds program, AIGC selects eligible students and determines amount of each student's fellowship.	<ol style="list-style-type: none"> 1. File the FAFSA. 2. Contact MU Financial Aid Office for agency address and phone number. Request application directly. Application deadline: June 1.

EMPLOYMENT ASSISTANCE

NEED-BASED EMPLOYMENT

PROGRAM	ELIGIBILITY	AMOUNTS	TERMS	APPLICATION PROCESS
Federal Work Study (FWS)	<ol style="list-style-type: none"> 1. Enrolled at least half-time each term. 2. Must show financial need. 3. Must be enrolled in a degree program making satisfactory progress. 4. Must show proof of identity and eligibility to work in U.S. (original birth certificate, social security card or U.S. passport, visa). 	Awards range from \$1,000–\$3,000 per academic year. MU selects eligible students and determines amount of each student's award.	Jobs are available on campus, off-campus (Job Location and Development), and in community service positions. Paid every 2 weeks; rate of pay depends on nature of job, skills, and experience. We recommend students work no more than 20 hours per week while classes are in session; students may work no more than 40 hours per week while classes are not in session, and may not earn more than dollar amount of award.	<ol style="list-style-type: none"> 1. File the FAFSA. 2. Use JobConnection to access job listings.

NON-NEED BASED EMPLOYMENT

Marquette Student Employment (MSE)	<ol style="list-style-type: none"> 1. Students who do not demonstrate financial need or have not applied for financial assistance. 2. Must show proof of identity and eligibility to work in U.S. (original birth certificate, Social Security card U.S. passport, visa). 	Awards range from \$1,000–\$2,500. Students not eligible for FWS may work on campus using MSE.	Paid every two weeks; rate of pay depends on nature of job, skills, and experience. We recommend students work no more than 20 hours per week while classes are in session; students may work no more than 40 hours per week while classes are not in session.	Use JobConnection to access job listings.
Private Employment*	<ol style="list-style-type: none"> 1. Students who do not demonstrate financial need or have not applied for financial assistance. 2. Must show proof of identity and eligibility to work in U.S. (original birth certificate, Social Security card U.S. passport). 	Varies. Determined by each employer.	Employer determines rate of pay of frequency of payment. Off-campus positions with Milwaukee area businesses have no restrictions on hours worked; however, we recommend a student work no more than 20 hours per week while classes are in session.	Use JobConnection to access job listings.

* Development of these positions is subsidized by the federal government under Job Location and Development (JLD).

LOAN ASSISTANCE

PROGRAM	ELIGIBILITY	AMOUNTS	TERMS	APPLICATION PROCESS
William D. Ford Federal Direct Loan — Subsidized (Stafford/Ford Loan)	<ol style="list-style-type: none"> 1. Enrolled at least half-time. 2. Not in default on another previous loan. 3. Must show financial need. 4. Must be a U.S. citizen or eligible non-citizen. 5. Making satisfactory progress toward a degree. 	Students may borrow up to \$8500 per academic year. The exact amount will vary depending upon financial need. Cumulative maximum for graduate and professional students is \$65,500 for both undergraduate and professional studies combined.	Interest rate is set at T-bill plus 1.7 percent while in school, grace, or deferment; and T-bill plus 2.3 percent in repayment (not to exceed 8.25 percent). No payments and no interest while enrolled at least half-time. Interest accrues, and repayment begins 6 months after the last date of half-time enrollment. Standard repayment period is 10 years. Other repayment options are available. A 1.5 percent processing fee is deducted from the loan proceeds when the funds are disbursed.	<ol style="list-style-type: none"> 1. File the Free Application for Federal Student Aid. 2. Eligible students who have accepted the Stafford Loan on CheckMarq will receive instructions on completing the electronic Master Promissory Note.
William D. Ford Federal Direct Loan — Unsubsidized (Stafford/Ford Loan)	<ol style="list-style-type: none"> 1. Enrolled at least half-time. 2. Not in default on another student loan. 3. U.S. citizen or eligible non-citizen. 4. Making satisfactory academic progress. 	Loan limits are calculated in combination with any amounts borrowed from the Subsidized Stafford Loan. Annual combined limit cannot exceed \$18,500.	Same as Subsidized Stafford except interest accrues while in school. Student may choose to make quarterly interest payments, or have the interest deferred and capitalized prior to repayment.	<ol style="list-style-type: none"> 1. File the Free Application for Federal Student Aid. 2. Eligible students who have accepted the Stafford Loan on CheckMarq will receive instructions on completing the electronic Master Promissory Note.

- Be working toward a degree or certificate.
- Be making satisfactory academic progress (i.e., to be eligible for aid, a student must have academic standing that is consistent with university requirements for graduation).
- Not be in default on any loan or owe a refund on any grant made under Title IV of the Higher Education Act of 1965, as amended, at any institution.

APPLICATION PROCEDURES

Students may apply for financial aid through the Office of Student Financial Aid if they are currently enrolled or are applying for admission to Marquette University. Be advised that no offer of financial assistance will be made until the student is formally admitted to the university. All students applying for financial aid through the Office of Student Financial Aid must complete the Free Application for Federal Student Aid (FAFSA). The FAFSA is used to analyze the applicant's financial resources and to determine the expected contribution toward meeting educational expenses. The FAFSA is available online at <http://www.fafsa.ed.gov> beginning on January 1 for the upcoming academic year.

During the application process, students may be asked to verify the information reported on the FAFSA. Any aid offer will be contingent upon completion of the verification process.

SATISFACTORY ACADEMIC PROGRESS POLICY

By federal regulation, Marquette University is required to apply both qualitative and quantitative standards in measuring academic progress for financial aid purposes. These standards apply to all students who receive institutional, state and federal Title IV and Title VII funds administered by the university. Federal Title IV programs include Federal Pell Grants, Federal Supplemental Educational Opportunity Grants, William D. Ford Federal Direct Stafford and PLUS Loans, Federal Perkins Loans and Federal Work Study. Title VII programs include Federal Nursing Loans, Federal Health Professional Loans for dental students, and disadvantaged scholarships, grants, and loans.

Marquette has established the following criteria for graduate students in conjunction with federal regulation published on Oct. 6, 1993, Federal Register Part 668.16 and the Higher Education Amendments of 1986.

I. QUANTITATIVE STANDARDS OF ACADEMIC PROGRESS

Graduate Students*Master's Degree*

Applicants for financial aid are expected to complete their degrees within 12 terms.

Doctoral Degree

Applicants for financial aid are expected to complete their degrees within 12 terms. A student who enters a doctoral program with a master's degree in the same field as that in which he or she will pursue the doctoral program must complete the program within 10 terms.

In addition, the following quantitative standards must be met by all graduate students:

Enrolled Credits	Credits to be Completed (75 percent)	Enrolled Credits	Credits to be Completed (75 percent)
24+	18	14	11
23	17	13	10
22	17	12	9
21	16	11	8
20	15	10	7
19	14	9	6
18	14	8	6
17	13	7	6
16	12	6	4
15	11		

Note: Incompletes, not reported grades, grades of "F" or audit credits will not be counted as earned credits.

II. FAILURE TO MEET THE SATISFACTORY ACADEMIC PROGRESS STANDARDS

Quantitative Standard*First Occurrence*

For any academic year in which a student enrolls but does not satisfactorily meet the standards, the student will be put in a warning status. The student will be notified of this status in writing.

Second Occurrence

If a student fails to meet the standards for a second consecutive term, the student will be ineligible for further aid consideration. Eligibility can be regained by making satisfactory progress within one term at the student's own expense.

If a student in an ineligible status receives aid, full repayment will be required of all funds received, excluding Federal Work Study. A student working on the Federal Work Study program will have his/her employment terminated under that program.

Reinstatement of Eligibility

Once a student has made satisfactory progress during a particular term at Marquette at his/her own expense, the student must provide the Office of Student Financial Aid with a final grade report. The student will then be reinstated to eligible status.

III. SATISFACTORY ACADEMIC PROGRESS APPEAL PROCEDURES

- A. Student must complete Section A of the appeal form (available in the Office of Student Financial Aid) and forward it to the appropriate academic dean for completion of Section B.
- B. The Office of Student Financial Aid will communicate results of the appeal to the student.
- C. Appeal must be made prior to the end of the term for which aid is desired.
- D. Recommendation of the dean is final.

The University

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 1.3 million volumes and 5,000 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 250 online databases, thousands of books in digital format, and an ever-growing (over 14,000 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 220 networked PCs, 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, 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, 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, circulating laptops with wireless connectivity, a cluster of PCs, and assigned study rooms 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/contact/map/
- 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 Legal Research Center that is part of Sensenbrenner Hall, the home of the Law School. It is the largest legal research facility in southeastern Wisconsin with a collection of more than 328,000 volumes and microform equivalents representing 158,000 titles and more than 3,000 subscriptions, as well as access to hundreds of online legal resources.

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.

EDUCATION RESOURCES CENTER

The School of Education maintains an Education Resource Center in the Walter Schroeder Health Sciences and Education Complex, 199.

The multipurpose center is configured as an independent study area, a meeting place for special interest groups, and a student lounge. Reserve items for student and faculty use are housed in the center in addition to various types of equipment, such as data projectors, TV/VCRs and camcorders, used to support instruction. Computers and a PrintWise Station are available in an adjoining lab.

HAGGERTY MUSEUM OF ART

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

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

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

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

HARTMAN LITERACY AND LEARNING CENTER

The Hartman Literacy and Learning Center is a facility within the School of Education which supports undergraduate and graduate literacy-related programs. The center library houses a children's literature collection which is used by School of Education students as well as children and families participating in the Marquette University Family Literacy Project, a collaboration between the university and neighborhood elementary schools. Students enrolled in EDUC 160 (Practicum in Reading) participate in the Family Literacy Project by tutoring small groups of children in reading and writing after school. The Hartman Literacy and Learning Center provides faculty and staff to support and conduct research regarding the project.

INSTRUCTIONAL MEDIA CENTER

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

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

RESEARCH CENTERS AND INSTITUTES

In order to foster and enhance research and study at Marquette University, a number of units on campus have established thematic research centers and institutes. These centers and institutes offer the opportunity for active collaboration and research in a variety of categorical areas. Examples include the Center for Mass Media Research, the Center for Materials Science and Technology, the Center for Psychological Services, the Center for Supply Chain Management, the Institute for Transnational Justice, the Integrative Neuroscience Research Center, the Les Aspin Center for Government, the National Sports Law Institute, the Transportation Research Center, and the Wisconsin Geriatric Education Center. The Graduate School maintains a list of currently active centers and institutes.

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

PERSONAL RESOURCES AND FACILITIES

ALUMNI MEMORIAL UNION

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

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

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

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

ATHLETICS

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

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

CAMPUS INTERNATIONAL PROGRAMS

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

Prospective undergraduate students who are not U.S. citizens or immigrants should contact OCIP for appropriate information and application materials. OCIP is the worldwide marketing, recruitment and admissions office for nonimmigrant undergraduate applicants. OCIP is also the office which may issue the federal documents required for most students, faculty and researchers to apply for United States visas to enter this country for enrollment at Marquette.

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

Specialized arrival, housing and orientation programs are provided for new international students prior to the beginning of the fall and spring terms. Ongoing orientation programs are offered throughout the year along with assistance to individual students regarding personal situations, government regulations and procedures, campus and community involvement, and

a wide range of other cross-cultural issues. Marquette's International Center is a branch of OCIP dedicated to the social interaction and cross-cultural education of students from around the world including Americans. OCIP also administers two international group health insurance programs for the protection of Marquette's international students, faculty and researchers.

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

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

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

CAMPUS SAFETY

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

Marquette maintains its own Department of Public Safety as a security and safety service to the university community. The department is located on the first floor of Parking Structure I, 749 N. 16th St. (between Wisconsin Avenue and Wells Street). This location houses Public Safety Administration, Officer Operations, Communications Center, Preventive Services, and Student Safety Programs. Public Safety operates 24 hours a day, every day. Services can be obtained by calling (414) 288-6800. In cases of emergency, students and employees should contact Public Safety's emergency line by dialing 8-1911 from any campus extension or (414) 288-1911 from any off-campus phone.

Public Safety officers monitor on- and off-campus areas utilizing squad, foot and bicycle patrols. Public Safety officers are trained to respond to all calls for assistance, including crimes in progress and medical emergencies. 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 Public Safety's Safety Services officers, who are on duty from 11:30 p.m. to 7:30 a.m., daily.

The department maintains an outdoor telephone system, including more than 150 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*, a booklet which includes campus crime statistics and crime prevention strategies. Copies are available from Public Safety or by calling (414) 288-7320.

CAREER SERVICES CENTER

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

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

- **Career counseling/job search assistance:** Students having selected a major can often use assistant researching and clarifying career possibilities base don that major. Career counselors can assist in this process. Students needing assistance can seek help from a career counselor. These professional can provide help with resumes, cover letters, developing a job search plan, preparing for interview, and clarifying career goals.
- **Seminars** for small groups and classes are conducted regularly throughout the year on topics such as job search, resume and cover letter writing, interviewing, dress for success, and networking. Individual counseling is available by appointment. Every afternoon, a trained career intern in available to critique resumes and conduct orientations to MU CareerTRAK and services offered in the center.
- **Career Fairs:** Marquette students meet with business, communication, government, non-profit, and technical employers each year in early fall for a two-day job fair conducted by Career Services for Marquette students only. In early spring, the Wisconsin Private Colleges Fair is held in Marquette's Student Union for MU students and those from other private colleges in Wisconsin.
- **The Kimberly-Clark Career Library:** This center provides a wide variety of employment, career and graduate school information, including subscriptions to newspapers, magazines and other periodicals that profile job vacancies; industry information that include a variety of directories that help job seekers uncover potential employers in particular industries or in specific areas of the country; information and handouts concerning occupations, such as "What Can I Do With A Major in . . . ?"; graduate school and entrance exam information; job search resources including sample resumes, sample letters, information about search strategies; and several computers for job search use, including access to a laser printer.
- **MU Connect:** Career Alumni Network (CAN): This Career Alumni Networking Program, formerly known as MUSCAN, can assist you in many ways. This is an online listing of MU alumni interested in serving as a resource for students making career decisions and seeking positions. Whether you are researching career fields or seeking internships or full-time positions in a particular city, industry, or organization be sure to include CAN in your resource list.
- **Online Resources:** Most of our career resources are available online. Current data and web links are accessible online at www.marquette.edu/csc. Questions and resumes for critiquing may be sent to career.services@marquette.edu.

The Career Services Center is located in Holthusen Hall, First Floor, telephone 414.288.7423. The center's hours are 8:00 a.m.-5:00 p.m. Monday through Friday with extended hours until 7:00 p.m. on Wednesday when classes are in session.

CHANGE OF NAME OR ADDRESS

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

In the case of a name change, the *Request for Change of Name* form available in the Office of the Registrar, or online at www.marquette.edu/registrar, must be completed and returned with appropriate documentation to the Office of the Registrar. The basis for the change of name must also be attached to the form. In the case of legal change of name, a certified copy of the court order authorizing the change is required.

Address changes may be made in person at the Office of the Registrar or through CheckMarq.

CHECK CASHING SERVICES

A student may cash checks at the Office of the Bursar, 1618 W. Wells St., and at U.S. Bank on the first floor in the Alumni Memorial Union. To cash a check, students must present a validated student ID card and pay a nominal fee. Check cashing is limited to \$50 on a personal check, \$150 on outside payroll checks, and any amount on Marquette University student payroll checks, per week. This service is available at the bursar's office between 8 a.m. and 4:30 p.m., Monday through Friday. Check cashing service also is available through the bank, between 8:30 a.m. and 5:30 p.m., Monday through Friday, and between noon and 3 p.m. on Saturday. Check cashing privileges are subject to suspension or revocation at the discretion of the bursar. Two ATM machines are available on the first floor of the AMU.

CHECKMARQ

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

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

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

CHILD CARE CENTER

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

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

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

COMMUTER STUDENT PROGRAMS

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

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

COMPUTER SALES

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

COMPUTER SUPPORT — See Information Technology Services

COUNSELING CENTER

The Counseling Center provides individual and group therapy for students with career decision-making and/or personal concerns. Services include emotional support and resources for students who are struggling with personal problems like depression, anxiety, relationship concerns, eating problems and other mental health issues. Additionally, professionals are prepared to help students make choices about their major and/or career direction, often using career tests and resources in the Career Information Library. The center is staffed by professional counselors, psychologists, clinical social workers, advanced doctoral students, and a consulting psychiatrist.

To make an appointment, contact the Counseling Center by phone at (414) 288-7172 or in person at Holthusen Hall, 204, 1324 W. Wisconsin Ave. All services are confidential, and free for full-time students. Part-time students are eligible for a free consultation session and will receive referral options. The Center is open Monday through Friday, 8 a.m. to 4:30 p.m. For additional resource information on personal and/or career exploration services, please visit the Counseling Center at www.marquette.edu/counseling/.

DENTAL CLINIC

The clinic services of the School of Dentistry are available to all Marquette students. The Dental Clinic, which is not a part of the Student Health Service, is located in the School of Dentistry. Dental services are provided at a reduced fee; all Marquette students enrolled in credit courses receive an additional 10 percent discount. Further information can be obtained from the recorded message at (414) 288-6790. Dental care is also available in the Faculty Practice located in the School of Dentistry. Here, your dental care is provided by dentists who teach in the School. Fees in this clinic are comparable to those charged in a private practice. To schedule an appointment, or for more information call (414) 288-0788.

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 (Voice/TDD). The Web site for the Office of Disability Services is www.marquette.edu/oses/disabilityservices.

GRADUATE STUDENT ORGANIZATION

The Graduate Student Organization (GSO) serves as a channel for graduate students to voice concerns, resolve difficulties, and provide feedback on issues that directly effect graduate student life at Marquette University.

The GSO will accomplish this goal by:

- Actively representing graduate students to the university
- Advocating changes deemed necessary by graduate students
- Fostering inter-departmental cooperation and exchange
- Encouraging unity among the graduate students as a whole
- Improving the academic environment for graduate students through sponsored events
- Providing social events for graduate students
- Working with University Ministry to provide spiritual support for graduate students who seek it

Membership in the GSO is available to any part-time or full-time graduate or professional student enrolled at Marquette University.

For a listing of events and meeting notices, past meeting minutes and the GSO constitution, go to: www.grad.mu.edu/current/GSO.shtml.

INFORMATION TECHNOLOGY SERVICES

Information Technology Services (IT Services) is a support organization responsible for providing quality technology services including voice and data communications, computer-based services and training to the Marquette community. IT Services manages MarquetteNet, the University's campus-wide fiber optic network built to handle the voice, video and data needs of the Marquette community. MarquetteNet allows students to access the computing resources distributed throughout campus. Students also have high-speed access to the Internet from their residence hall rooms. IT Services provides an enterprise wide e-mail system (eMarq) for faculty, staff, and students. IT Services maintains voice communication systems throughout the University, including Voicemail, Cellular phone service, local and long-distance service. Free voicemail and local calls are available to students in the residence halls. IT Services also provides support for the MarquetteCard. Additional information regarding the card can be found at www.MarquetteCard.com. IT Services provides support for Desire2Learn — a web-based tool that facilitates and supports online education at Marquette University. IT Services also supports UNIX and MS Windows servers for academic and administrative use. IT Services provides technical support for the PCs, Macintoshes, laser printers, scanners, and other peripherals in the

Campus Computer Labs. Members of the Marquette community can receive computing information and assistance from the IT Services Help Desk by calling (414) 288-7799 or e-mailing helpdesk@marquette.edu. IT Services supports business and information processing for University administrators as well as instructional and research needs of academic areas. For more information, including Help Desk hours, visit the IT Services Web site at www.marquette.edu/its/.

INTERNATIONAL CENTER

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

MAIL SERVICES

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

THE MANRESA PROJECT

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

MARQUETTE UNIVERSITY ALUMNI ASSOCIATION

Since 1891 the Marquette University Alumni Association (MUAA) has served Marquette and its current and future alumni. The mission of the MUAA is to help Marquette University as an urban, Catholic, Jesuit institution become one of the nation's most distinguished universities and, to this end, strive to bring all alumni closer to the University and one another in the Ignatian tradition of care for each person.

The MUAA is an umbrella organization comprising more than 30 geographic clubs, eight college-based alumni associations and four interest-based associations, all governed by a 27-member board of directors. The MUAA brings alumni together on affinity and interest, funds student scholarships and financial awards, recognizes outstanding alumni and supports the needs of the college deans as well as the university's enrollment, retention, fund raising, marketing and diversity efforts.

MULTICULTURAL CENTER

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

In conjunction with other departments and student organizations, the Office of Student Development offers programs and activities promoting ethnic awareness throughout the aca-

demic year. To learn more about these activities, contact the assistant dean for intercultural programs in the Office of Student Development, Alumni Memorial Union, 121, (414) 288-6769. The Multicultural Center lounge is located in the Alumni Memorial Union, 111.

OTHER FACILITIES

Marquette University makes use of the biological laboratories at Woods Hole, Massachusetts, and Cold Spring Harbor, New York, for advanced training in biology. Two scholarships are awarded annually for summer work at these institutions.

In addition, students majoring in engineering, mathematics, and the physical, biological and social sciences can arrange to do their research at Argonne National Laboratory, one of the best equipped research centers in the country.

PARKING SERVICES

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

Full semester permits for the fall term, spring term and summer session are now available for purchase online. You can find us at www.marquette.edu/parking.html. If available space allows, short-term, temporary parking permits may also be purchased from the Parking Office, located in the Wells Street Structure at 1240 W. Wells Street.

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

Student overnight or 24 hour parking permits are available in all three of the university's structure facilities; the 16th Street Structure at 749 N. 16th Street, the Wells Street Structure at 1240 W. Wells Street or the 18th Street Structure at 718 N. 18th Street behind Humphrey Hall. Twenty-four hour/overnight parking in surface lots will be limited to Lot B at Mashuda Hall, Lot R at Straz Tower and Campus Town 3 and 4, north of Open Pantry.

Both evening and part-time commuter student permits are also available for sale. Again specific lot assignments and entry gate cards are issued along with your vehicle permit. Please contact the Parking Office at (414) 288-6911 for more specific parking inquiries.

RECREATIONAL SPORTS

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

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

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

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

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

CLUB SPORTS

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

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

The following clubs are currently active for the 2006–2007 school year: *men's*: baseball, football, ice hockey, lacrosse, rugby and volleyball ; *men's and women's*: bowling, curling, cycling, fencing, kobudo, rowing, running, sailing, ski racing/snowboarding, swimming and diving, taekwondo, tennis, ultimate frisbee, and water skiing/wakeboarding; and *women's*: rugby, softball and volleyball.

INTRAMURAL SPORTS

The Intramural Sports program at Marquette invites students to take part in a wide variety of sport programs. Intramural programs are designed to provide a competitive opportunity to all participants. Form a team with friends, residence halls, or fraternities and sororities. A student may also sign up as an individual and will be placed on a team looking for additional players. You do not have to be highly skilled at an activity to participate. All of the intramural sports activities include opportunities for all skill levels, competitive desires and attitudes. The primary goal is for everyone to have a great time while competing for the coveted Intramural Sports champion t-shirt.

The Intramural Sports program provides over 35 different activities offered in team, dual and individual sports. To view a complete listing of all intramural sports please go to www.gomarquette.edu/recsports or call the Intramural Sports office at (414) 288-1558.

REGISTRATION

Students complete class registration via an Internet-based system known as CheckMarq (<http://checkmarq.mu.edu>). CheckMarq enables continuing and readmitted students to register for the next term during the previous term. New students register several weeks before the first day of class.

A student must have both a username and password to use CheckMarq. Information Technology Services assigns usernames and passwords to all new students for the duration of their studies at Marquette.

No class may be attended for which the student is not properly registered. Proper registration includes the payment of all tuition and fees. Advising is required for all students prior to registration each term. Accordingly, students who register for course work without adviser approval assume full responsibility for their registration. Courses that do not satisfy the requirements of their plans of study will not be applied toward the degree.

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

SPEECH AND HEARING CLINIC

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

STUDENT DEVELOPMENT

The staff of the Office of Student Development focuses its resources, programs and initiatives on the development of students and a campus community that promote self-understanding, social responsibility, and cultural and global awareness. We recognize the importance of developing the whole person and give particular attention to the intellectual, ethical and personal development and transition of students throughout their Marquette experience. Our work is based on the knowledge that meaningful engagement in the campus community facilitates academic success, the development of knowledge, skills and abilities, and commitment to the university's mission.

Through the design and delivery of a wide variety of programs and services, the Office of Student Development: (1) collaborates with others to create a vibrant, engaged, diverse and inclusive campus community; (2) encourages the expression of leadership through service to others; (3) celebrates the diverse nature of our campus community, highlights the gifts arising from this diversity and empowers those less represented in the community to identify and use their voices in this celebration; (4) challenges students to act with integrity and compassion and to reflect on the implications of their actions on individual, communal and global scales; and (5) assesses and advocates for the needs and development of students and plans initiatives accordingly.

Specific programs coordinated by the Office include:

- Preview, Orientation, and new student programs
- Students Taking Active Roles (STAR) first-year leadership program
- recognition and advisement of more than 200 student organizations including Marquette University Student Government
- intercultural events and celebrations
- student activities and campus traditions
- music organizations and programs
- commuter student programs
- community service programs
- Hunger Clean-up
- Burke Scholarship program
- leadership workshops, conferences, and training sessions
- leadership resources and recognition programs
- student conduct administration
- Greek life — 20 fraternities and sororities
- Senior Week

The Office is located in the Alumni Memorial Union, Rooms 121 and 329, (414) 288-1412. A complete listing of activities and programs organized by the office can be found at www.marquette.edu/osd.

STUDENT EDUCATIONAL SERVICES

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

Located in the Alumni Memorial Union, 317, the Office of Student Educational Services invites students to drop in or phone the office at (414) 288-3270 with their requests or questions. A complete listing of programs and services can be found at www.marquette.edu/oses.

STUDENT HEALTH INSURANCE

All students enrolled and attending Marquette University and their dependents are eligible to participate in the Student Health Insurance Plan (SHIP). Plan description and enrollment materials will be mailed to all enrolled students before the start of fall term each year and to all new students starting spring term. Information about the plan may also be obtained at the Student Health Service. Marquette University makes no representations about the student health plan, but considers it to be an alternative to the limitations of family plans or for students who use it as their sole source of coverage. For general information stop by the Student Health Service or call (414) 288-7184.

STUDENT HEALTH SERVICE

ELIGIBILITY

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

Clinical Services:

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

COST OF SERVICES

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

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

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

The Student Health Service physicians are all board certified in family practice, pediatrics or internal medicine. Special areas in which these physicians are highly proficient include sports medicine, women's health, eating disorders, and adolescent medicine. Providers certified as nurse practitioners, physician assistants, registered nurses and health educators also assist students with their health care needs.

Clinic

LOCATION

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

Telephone: (414) 288-7184

Fax: (414) 288-5681

Web site: www.mu.edu/shs

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

HOURS*

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

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

Friday — 8:30 a.m. to 4 p.m.

Saturday Clinic — 10 a.m. to 2 p.m.

Summer

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

*Reduced hours when classes are not in session.

The clinic is closed when university offices are closed.

Center for Health Education and Promotion

LOCATION

707 Building, First Floor
Telephone: (414) 288-5217
Fax: (414) 288-0234

HOURS

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

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

Health and Wellness Topics:

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

STUDENT IDENTIFICATION CARDS

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

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

STUDENT PUBLICATIONS

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

STUDENT SAFETY PROGRAMS

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

LIMO PROGRAM

The LIMO (Local Intercampus Mobile Operation) Program provides a means for Marquette students and employees to travel safely between the Marquette campus and its adjoining residential areas. With a fleet of 12 vans, the LIMO program is capable of transporting all individuals, including those with physical restrictions. Posted "LIMO STOP" signs are located in every residence hall, the Alumni Memorial Union, the Raynor Memorial Libraries, the Rec Center, Humphrey Hall, Cudahy Hall and the Public Safety Office at 749 N. 16th St. These designated stops are visited by LIMO vans approximately every 15 minutes. To request a LIMO transport from any other location, call (414) 288-6363. By showing the LIMO driver a valid Marquette University ID card, students and employees are entitled to free transportation to many locations in the on- and near off-campus areas. Generally, this includes the area bounded by State Street to the north, Clybourn Street to the south, North 7th Street to the east and North 24th Street to the west. The LIMO program operates from 5 p.m. to 3 a.m. seven nights a week, year round.

SAFETY PATROL AND ESCORT SERVICE

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

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

BICYCLE SAFETY

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

THEATRE ARTS, DRAMA

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

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

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

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

TRANSCRIPT OF RECORDS

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

A student may obtain a transcript of his or her Marquette record by completing a *Transcript Request Form* available at www.marquette.edu/registrar and submitting it to the Office of the Registrar at least one week in advance of the date on which the transcript is needed. Fax requests are accepted, but transcripts will NOT be forwarded by fax.

The fee for this regular service is \$3 per transcript. The fee for a rush transcript service is \$10 per transcript. All transcript fees are payable at the time of the request, preferably by check.

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

TUTORING

See Student Educational Services and Writing Center

UNIVERSITY BOOKSTORES

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

BOOK MARQ

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

THE MARQUETTE SPIRIT SHOP

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

UNIVERSITY INFORMATION

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

UNIVERSITY MINISTRY

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

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

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

VETERANS BENEFITS

The Office of the Registrar acts as liaison between the student and the Veterans Administration or the Wisconsin Department of Veterans Affairs. Any student eligible to receive educational benefits under one of the various Veterans Administration programs must report to the Office of the Registrar at the beginning of each fall, spring or summer term for which he or she is registered. Information or consultation is available at any time during regular office hours. Information regarding veteran's 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. Any veteran who fails to meet these standards cannot be certified by the school for VA benefits until he has satisfactorily completed counseling with the Veterans Administration.

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

Required Grade Point Average

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

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

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

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

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

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

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

WRITING CENTER

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

Graduate Programs and Courses

GRADUATE PROGRAMS

The following pages describe the graduate instruction and research programs offered at Marquette University. Prospective students are reminded to read the preceding section of this bulletin for general information on Graduate School admission requirements, academic regulations, and graduate programs.

Please note:

- a) The prerequisites for any graduate program include an undergraduate major which has qualified the student for either research or professional work at advanced levels.
- b) The courses described for each program are graduate offerings. These are numbered 200 through 399. Other courses listed (numbered 100 through 198) are upper division undergraduate courses. These undergraduate courses have been approved for graduate credit and may be taken with the approval of the student's department. To receive graduate credit, students must do extra work beyond that required for undergraduate credit. Course descriptions and prerequisites for 100-level courses are found in the *Undergraduate Bulletin*.
- c) Some courses are listed with a variable number of credits (e.g., 1-3 credit hours). Usually the department or college determines the specific number of credits for these courses each term. This information is published on CheckMarq at www.marquette.edu/registrar/soc prior to each registration. For a few variable credit courses, (e.g., master's thesis, doctoral dissertation) the bulletin indicates the possible number of credits which might be taken during a given term. Students should consult with their adviser before registering for these types of classes to determine the appropriate number of credits for which to enroll.
- d) The specific courses offered during any given term will be listed on CheckMarq for that term. Students should be aware that Marquette University cannot promise to offer all required courses during the summer sessions.

ACCOUNTING (ACCO) See BUSINESS ADMINISTRATION (BUAD)

BIOINFORMATICS (BIIN)

Marquette University Program

Co-director and Professor: Clough
Professor: Bansal, Corliss, Courtright, Harris, Krenz, Merrill, Munroe, Unsworth, Waring
Associate Professor: Feng, Johnson, Richie, Riedel, Ropella, Slattery
Assistant Professor: Ahamed, Bajorunaite, Factor, Johnson, Madiraju, Povinelli, Scheidt, Struble

Note: Faculty members and their ranks are for the 2005–2006 academic year.

Medical College of Wisconsin Program

Co-director and Associate Professor: Beard
Co-director and Assistant Professor: Liang
Professor: Cowley, Greene, Griffith, Hendee, Jacob
Associate Professor: Ghosh, Olivier
Assistant Professor: Kwitek, Sugg, Tonellato, Twigger, T. Wang, X. Wang

DEGREE OFFERED

Master of Science, students are admitted under Plan B (non-thesis option) but Plan A (thesis option) is also offered

PROGRAM DESCRIPTION

This interdisciplinary program is jointly offered by Marquette University and Medical College of Wisconsin. The program prepares students for a multidisciplinary career in the biomedical sciences using mathematics, statistics, and computer science. It is designed to provide students quantitative tools for analyzing data and problems associated with molecular, cellular, physiological, and particularly, genetic systems. Students may select courses from a list of approved courses offered by the following departments at Marquette: Mathematics, Statistics and Computer Science; Biology; Biomedical Engineering; and Electrical and Computer Engineering. In addition, courses are offered by the Department of Physiology and the Division of Biostatistics at Medical College of Wisconsin. The program meets the needs of recent undergraduates seeking an advanced degree as well as employed professionals interested in opportunities for career advancement. Students may pursue the degree on a full-time or part-time basis. Many courses are offered evenings.

PREREQUISITES FOR ADMISSION

Applicants must have completed or be in the process of completing a bachelor's degree from an accredited college or university. Applicants with degrees in a wide range of scientific areas will be considered. These areas include: biological and medical science, computer science, mathematics, statistics, engineering, and physical sciences. Students may be admitted on a probationary basis if they are not fully prepared to take courses carrying graduate credit in both computer science and biology.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Marquette University Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. An essay outlining relevant work experience or education, career goals, possible areas of interest, and reasons for seeking admission to this program.
4. Three letters of reference from professors or professionals familiar with the applicant's abilities, academic work, and/or professional background.
5. (*For international applicants only*) a TOEFL score or other acceptable proof of English proficiency along with a recent GRE score (both are strongly recommended). A minimum score of 600 on the paper-based version or 250 on the computer-based version is required. Minimum scoring for the new Internet-based version is still being established for this program.

GENERAL INFORMATION

Students interested in applying to the program should consult the program Web site www.brc.mcw.edu/AP/ for a list of currently approved courses and scheduled course offerings for the next term.

MASTER'S REQUIREMENTS

Students are admitted to the program under Plan B (non-thesis option), although with the co-directors' approval, students may elect to transfer to Plan A (thesis option). In both options below, courses taken for credit in this program must be from the list of courses approved by the Steering Committee. Exceptions must be approved by the Steering Committee.

PLAN B OPTION (36 CREDITS)

Students must complete 36 credit hours of course work, of which at least 24 hours must be earned in graduate-level courses (200-level and above).

PLAN A OPTION (30 CREDITS)

Students must complete 24 credit hours of course work, of which at least 21 credit hours must be earned in graduate-level courses (200-level and above). Students must also complete a master's thesis for 6 credit hours and pass an oral examination concentrated on the thesis.

For both options, students are required to earn 6 credits for Bioinformatics I & II (BIIN 200 and 201), 3 credits for Practicum in Bioinformatics (BIIN 290), a minimum of 6 credits of approved computer science courses at the 200-level, and a minimum of 6 credits of approved biological science courses at the 200-level.

COURSE DESCRIPTIONS

GRADUATE COURSES:

BIIN 200. Bioinformatics I 3 sem. hrs.

Designed to aid students in the application of knowledge gained through previous course work in informatics, information systems, mathematics, medical and/or biological research to the design, development, implementation and

evaluation of information systems and analysis methods applied to biomedical data.

Prereq: BIOL 4 and CHEM 24 which may be taken concurrently and COSC 55 and cons. of dept. ch.

BIIN 201. Bioinformatics 2 3 sem. hrs.

Designed to aid students in the application of knowledge gained through previous course work in informatics, information systems, mathematics, medical and/or biological research to the design, development, implementation and evaluation of information systems and analysis methods applied to biomedical data.

Prereq: BIOL 4 and CHEM 24 which may be taken concurrently and COSC 55 and cons. of dept. ch.

BIIN 210. Physiologic Genomics 5 sem. hrs.

Emphasizes genetics, including Mendel and applications of molecular genetics. Also genome sequence comparison between species and the effect of gene modifications on phenotype. Offered at Medical College of Wisconsin. Offered occasionally.

Prereq: Cons. of dept. ch.; knowledge of human physiology and genetics.

BIIN 211. Advanced Molecular Genetics 3 sem. hrs.

Presents the background to six different specific topics in molecular genetics in an initial lecture followed by several discussion sessions in which research papers from that area are presented and critically evaluated. Emphasis is placed on developing the ability to critically read and evaluate experimental approaches and data from original research papers. Examples of topics include: the DNA binding properties of proteins; regulation of gene expression at the translation level; mechanisms of DNA replication; regulation of gene expression by enhancer elements; and DNA transposition mechanisms. Offered at Medical College of Wisconsin. Offered occasionally.

Prereq: Cons. of dept. ch.

BIIN 212. Statistical Genetics 3 sem. hrs.

Fundamental elements of mathematical and population genetics, and statistical theory of the methods of human genetic analysis. Topics include: Hardy-Weinberg equilibrium, inbreeding, selection, mutation, models for polygenic and multifactorial inheritance, variance components estimation for the genetic analysis of familial aggregation, linkage and segregation analysis, and ascertainment problems. Offered at Medical College of Wisconsin. Offered occasionally. *Prereq:* MSCS 261 or equiv. and cons. of dept. ch.

BIIN 280. Topics in Bioinformatics 3 sem. hrs.

Offered occasionally. *Prereq:* Cons. of dept. ch.

BIIN 290. Practicum in Bioinformatics 3 sem. hrs.

Provides students with an opportunity to participate in the practice of research and/or development in the area of bioinformatics. *Prereq:* Admitted to BIIN program, BIIN 200 and cons. of dept. ch.

BIIN 295. Independent Study 1-3 sem. hrs.

Prereq: Admitted to BIIN program; cons. of dept. ch.

BIIN 296. Seminar 1-3 sem. hrs.

Seminars in research and development tools and applications designed for M.S. in bioinformatics program.

BIIN 298. Special Topics in Life Sciences 1-9 sem. hrs.

Graduate-level course in selected areas of the life sciences offered at Medical College of Wisconsin. *Prereq:* Cons. of dept. ch.

BIIN 299. Master's Thesis 3-6 sem. hrs.
Prereq: Cons. of dept. ch.

BIOLOGICAL SCIENCES (BSCI)

FACULTY IN BIOLOGICAL SCIENCES

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

FACULTY IN NEUROSCIENCE

Professor: Buchanan (*Wehr Distinguished Professor*), Vaughn
Associate Professor: Cullinan, Lobner, Mynlieff
Assistant Professor: Baker, Cannon, Ghasemzadeh, Mantsch, Peoples, Wagner
Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREES OFFERED

Master of Science, Plan A only; Doctor of Philosophy

SPECIALIZATIONS

Master's: Cell Biology, Developmental Biology, Ecology, Epithelial Physiology, Genetics, Microbiology, Molecular Biology, Muscle and Exercise Physiology

Doctoral: Cell Biology, Developmental Biology, Ecology, Epithelial Physiology, Genetics, Microbiology, Molecular Biology, Muscle and Exercise Physiology, Neuroscience

PROGRAM DESCRIPTION

The biological sciences graduate program aspires to train experimental scientists capable of teaching and directing independent research by providing a broad theoretical background and an appreciation for the rigor of the scientific method. Students are prepared for employment in faculty positions and research posts in academia and industry.

NEUROSCIENCE SPECIALIZATION

A specialization in neuroscience is offered within the Department of Biological Sciences in collaboration with the neuroscience faculty in the Department of Biomedical Sciences at Marquette University. In addition to general training in the biological sciences, students will receive specialized course work in the neurosciences and will choose a neuroscience laboratory from either department for their thesis research.

PREREQUISITES FOR ADMISSION

Applicants are expected to have completed 36 semester hours of biology, as well as two terms of organic chemistry, one term of calculus, and two terms of physics. Also, applicants are encouraged to take course work in physical chemistry and biochemistry.

As a general rule, preference will be given to applicants to the doctoral program.

APPLICATION DEADLINE

No official deadline exists for the master's or the doctoral programs; however, completed applications will be reviewed starting on January 15. Applications for admission received after this date will be considered as space permits.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. A statement of professional goals and aspirations.
4. Three letters of recommendation which give evidence of the applicant's scholarly promise.
5. GRE scores (General Test is required, Subject Test is recommended).
6. (*For international applicants only*) a TOEFL score or other acceptable proof of English proficiency.

MASTER'S REQUIREMENTS

The program of course work and research for the master's degree is determined in consultation with the student's advisory committee. Each student is advised to take such courses as are properly related to academic background and research interests. All master's students are required to gain the equivalent of one year of teaching experience during the program.

A master's student must complete 24 credit hours of course work and six credit hours of thesis work. The student must pass a master's comprehensive examination and submit an approved thesis.

DOCTORAL REQUIREMENTS

The program of course work and research for the doctoral degree is determined in consultation with the student's advisory committee. Each student is advised to take such courses as are properly related to academic background and research interests. All doctoral students are required to gain the equivalent of one year of teaching experience during the program.

A doctoral student must complete a program of study defined, in conjunction with an adviser, on an approved *Doctoral Program Planning Form*. Advancement to candidacy for the doctoral degree is considered following successful completion of all requirements specified on the *Doctoral Program Planning Form* and after passing a qualifying examination. A typical doctoral student completes 30 credit hours of course work and 12 credit hours of dissertation work. The student must submit and defend a dissertation after completing all other formal requirements for the doctoral degree.

COURSE DESCRIPTIONS**UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:****BIOL 100. Biochemistry and the Molecular Basis of Biology** 3 sem. hrs.**BIOL 101. Experimental Molecular Biology** 3 sem. hrs.**BIOL 125. Genetics** 3 sem. hrs.**BIOL 126. Experimental Genetics** 3 sem. hrs.**BIOL 135. Cell Biology** 3 sem. hrs.**BIOL 137. Experimental Cell Biology** 3 sem. hrs.**BIOL 140. Advanced Ecology** 3 sem. hrs.**BIOL 142. Plant Biology** 3 sem. hrs.**BIOL 155. Neurobiology** 3 sem. hrs.**BIOL 156. Experimental Neurobiology** 3 sem. hrs.**BIOL 160. Animal Development** 3 sem. hrs.**BIOL 171. Experimental Physiology** 3 sem. hrs.**BIOL 176. Microbiology** 3 sem. hrs.**BIOL 185. Immunobiology** 3 sem. hrs.**GRADUATE COURSES:**

BIOL 201. Radioisotope Safety 2 sem. hrs.
Ionizing radiation: proper safety procedures in the independent use of radioisotopes and current regulatory guidelines and licensing procedures. Offered annually in Summer Session.
Prereq: BIOL 2 and CHEM 2; or BIOL 5 and CHEM 2; or cons. of dept. ch.

BIOL 211. Structure and Function of Proteins 3 sem. hrs.

Advanced protein biochemistry stressing methodology and primary literature. Topics include: properties of amino acids, peptide and proteins; protein folding and assembly; protein-protein interactions; allostery and regulation; enzyme kinetics and energetics; protein-ligand interactions; and post-translational modification of proteins. Offered alternate fall terms.
Prereq: BIOL 100 or cons. of instr.

BIOL 212. Biochemistry and Function of Nucleic Acids 3 sem. hrs.

The biochemistry of RNA and DNA with emphasis on biological function and evolution. Specific topics include: nucleic acid structure, biophysical properties, biosynthesis, and molecular function. Offered alternate fall terms.
Prereq: BIOL 100 or cons. of instr.

BIOL 213. Signaling, Structure, and Motility of Eukaryotic Cells 3 sem. hrs.

Discusses the dynamics, role, and regulation of cytoskeleton and molecular motors, as well as the principles and mechanisms of signal transduction in eukaryotic cells. Offered alternate spring terms. *Prereq: BIOL 135 or equiv.*

BIOL 214. Protein Trafficking and Cellular Homeostasis 3 sem. hrs.

An in-depth analysis of protein trafficking, organelle identity, and cellular homeostasis. Discusses, in detail, mechanisms of protein translocation across biological membranes, analysis of membrane sorting and the function of plasma membrane transporter and channel proteins. Also covers in detail the proteins and pathways involved in the maintenance of cell volume, pH, and ionic balance. Offered alternate spring terms. *Prereq: BIOL 135 or equiv.*

BIOL 215. Principles of Neuroscience 1 3 sem. hrs.

Designed to provide comprehensive survey of the study of the nervous system focusing on cellular and molecular neuroscience, developmental neuroscience, and motor systems. Offered fall term. *Prereq: Cons. of instr.*

BIOL 216. Principles of Neuroscience 2 3 sem. hrs.

Designed to provide a comprehensive survey of the study of the nervous system focusing on sensory systems, regulatory systems, cognitive neuroscience and behavior. Offered spring term. *Prereq: Cons. of instr.*

BIOL 227. Genomic Analysis and Bioinformatics 3 sem. hrs.

The organization and evolution of selected bacterial and eukaryotic genomes. Genomic structure as viewed from the perspective of evolutionary rearrangements and gene expression. Analysis of current experimental methods for determining and modifying gene function and of computational approaches to the identification of unique patterns in respective protein and nucleic acid databases. *Prereq: Open to Senior undergraduates with cons. of instr. and cons. of Graduate School.*

BIOL 232. Bacterial Physiology 2 sem. hrs. Diversity, mechanisms, regulation, and evolution of prokaryotic biological activities. Points of emphasis: 1) the use of bacterial genetics and molecular biology to study physiology; and 2) bacterial activities that are important to the rest of biology, including symbiosis. Offered alternate fall terms. *Prereq: BIOL 100 or equiv.; or BIOL 176 or equiv.; or cons. of instr.*

BIOL 235. Microbiology in the Environment 3 sem. hrs.

The effect of the environment on microbial growth and the role of microorganisms in the environment. Examines diversity, activity and abundance of microbes and involves examples from literature. Offered alternate spring terms. *Prereq: BIOL 176 or equiv. or cons. of instr.*

BIOL 244. Developmental Genetics and Epigenetics 3 sem. hrs.

Analysis of genetic and epigenetic influences on development, looking at specific examples from yeast, plant and animal model organisms. Topics include: genetics of flower development, yeast mating type switching, DNA methylation,

genomic imprinting, chromatin remodeling, permutation and prions. Offered alternate fall terms. *Prereq: BIOL 125 and 135 or equiv.*

BIOL 250. Techniques in Neuroscience Research 2 sem. hrs.

Laboratory course. Provides an introduction to important laboratory techniques in experimental neuroscience. *Prereq: BIOL 215 and 216; or cons. of instr.*

BIOL 251. Advanced Survey in Neuroscience 1 1 sem. hr.

An introduction to current neuroscience literature with a focus on research at Marquette. Offered fall term. *Prereq: Cons. of instr.*

BIOL 252. Advanced Survey in Neuroscience 2 1 sem. hr.

An introduction to current neuroscience literature with a focus on research at Marquette. Offered spring term. *Prereq: Cons. of instr.*

BIOL 255. Eukaryotic Genetics and Chromosome Structure 3 sem. hrs.

Genetics of eukaryotic model organisms. Focus on genetic approaches to the analysis of contemporary biological problems related to eukaryotic chromosome structure and function. Offered alternate fall terms. *Prereq: BIOL 125 or equiv.*

BIOL 263. Cell and Molecular Biology of Early Development 3 sem. hrs.

Study of the molecular mechanisms underlying developmental pathways and processes in a variety of model organisms including fruit flies, nematodes, mice and *Arabidopsis*. Emphasizes genetic, biochemical and molecular techniques used in studying these complex systems. *Prereq: BIOL 135 or equiv.; or BIOL 160 or equiv.*

BIOL 274. Advanced Physiology Seminar 1 sem. hr.

In-depth analysis and discussion of the scientific literature in the field of physiology. Offered as needed fall terms. *Prereq: BIOL 172 or equiv.; credit will not be given for both BIOL 274 and BIOL 275.*

BIOL 275. Advanced Physiology 5 sem. hrs.

An advanced mammalian physiology course including an analysis of muscle, cardiovascular, respiratory, neural, endocrine and renal functions. Emphasis is placed on cellular mechanisms and the control and interaction of organ systems. Offered as needed fall terms. *Prereq: BIOL 100 or equiv. and BIOL 172 or equiv. or cons. of instr.*

BIOL 277. Advanced Exercise Physiology 3 sem. hrs.

Study of the effects of acute and chronic exercise on selected organ systems. Particular emphasis will be placed on muscle, cardiovascular, respiratory, and environmental physiology. Offered alternate spring terms. *Prereq: BIOL 172 or equiv.; or cons. of instr.*

BIOL 281. Systems Physiology 3 sem. hrs.

The first third of the course focuses on renal physiology. Covers the physiology of the mammalian kidney in detail, including the transport functions of the segments of the nephron, the identification of the molecular components underlying such transport, and the analysis of genetic diseases affecting renal function. Also

covers the interactions between the renal and cardiovascular systems. This section ends with vertebrates and invertebrates. The last two thirds of the course focuses on muscle biology. Covers skeletal, cardiac and smooth muscle relative to their regulation, structure and function. Emphasizes structural organization, composition, mechanics and kinetics. In addition, covers development, regulation and disease states. Emphasis is placed on critical reading of the primary scientific literature. *Prereq: BIOL 172 or equiv.*

BIOL 295. Independent Study 1-3 sem. hrs.

Investigations in selected areas of biology. Offered every term. *Prereq: Cons. of instr. and cons. of dept. ch.*

BIOL 296. Laboratory Rotations in Biology 1-3 sem. hrs.

Informal lab rotation of first-year graduate students based on mutual preferences of the student and faculty member including lab group meetings, literature research, benchwork, presentation of findings and/or research plan to lab members. S/U grade assessment. *Prereq: Cons. of dept. ch.*

BIOL 297. Department Colloquium 0 sem. hrs.

Scholarly reports on selected topics in modern biology by visiting and resident investigators and graduate students. Attendance required of all full-time students. Required of all full-time graduate students in biology. S/U grade assessment.

BIOL 298. Special Topics in Biology 1-3 sem. hrs.

Analysis of selected topics under faculty supervision. Offered every term. S/U grade assessment. May not be taken by first year Ph.D. students. *Prereq: Cons. of instr.*

BIOL 299. Master's Thesis 1-6 sem. hrs.

Offered every term. *Prereq: Cons. of dept. ch.*

BIOL 320. Special Topics in Cell and Developmental Biology 1-3 sem. hrs.

Topics of current interest in cell and developmental biology. Offered occasionally. *Prereq: BSCI program and BIOL 135 or equiv.; or BSCI program and BIOL 165 or equiv.; or cons. of instr.*

BIOL 323. Special Topics in Biochemistry and Genetics 1-3 sem. hrs.

Topics of current interest in biochemistry and genetics. Offered occasionally. *Prereq: Major in Biological Sciences - masters or Ph.D.; or cons. of instr.*

BIOL 325. Special Topics in Plant Molecular Biology 1-3 sem. hrs.

Topics of current interest in plant molecular biology. Offered occasionally.

BIOL 350. Special Topics In Neuroscience 1-3 sem. hrs.

Topics of current interest in neuroscience. Offered occasionally fall term. *Prereq: Cons. of instr.*

BIOL 380. Special Topics in Physiology 1-3 sem. hrs.

Topics of current interest in physiology. Offered occasionally. *Prereq: BSCI program; or cons. of instr.*

BIOL 399. Doctoral Dissertation

1-12 sem. hrs.

Offered every term. *Prereq:* Cons. of dept. ch.**BIOL 891. Continuous Enrollment — Less than Half-Time** 0 sem. hrs.

Fee. S/U grade assessment.

Prereq: Cons. of dept. ch.**BIOL 892. Continuous Enrollment — Half-Time** 0 sem. hrs.

Fee. S/U grade assessment.

Prereq: Cons. of dept. ch.**BIOL 893. Continuous Enrollment — Full-Time** 0 sem. hrs.

Fee. S/U grade assessment.

Prereq: Cons. of dept. ch.

BIOMEDICAL ENGINEERING (BIEN)

Chairperson and Professor: Ropella*Professor:* Brower, Clough, Harris, Hendee, Jeutter, Josse, Sances (*Emeritus*), Seitz, Winters*Adjunct Professor:* Battocletti, Cowley, Hoffman, Hudetz, Hyde, Larson, Madden, Merritt, Pintar, Sarna, Schwab, J. Smith, Wartier, Wertsch, Yoganandan*Associate Professor:* Brown, Cariapa, Goldberg, Krenz, Marklin, Olson, Riedel, Schmit, Silver-Thorn*Adjunct Associate Professor:* Abler, Greene, Jodat, Schlager, Schmeling, Soto, Toth*Assistant Professor:* Audi, Beardsley, Gilat-Schmidt, Nagurka, Scheidt*Adjunct Assistant Professor:* Bandettini, Boskamp, DeYoe, Donnell, Hause, Hubbard, Liu, Lyon, Marks, Merker, Molthen, Ninomiya, P. Smith, Patel, Prieto, Rao, Rickaby, Schmainda, Shi, Street, Tonellato, Ulmer, Wang*Research Assistant Professor:* Johnson*Note:* Faculty members and their ranks are for the 2005–2006 academic year.**DEGREES OFFERED**

Master of Science, Plan A only; Doctor of Philosophy

MISSION STATEMENT

In accord with the Catholic, Jesuit tradition, the mission of the Department of Biomedical Engineering is to provide its students with knowledge, leadership, communication skills, while fostering ethical and moral character, and compassion for the human condition. This knowledge, character, compassion and skills will allow the students, as biomedical engineers, to respond to the scientific and technical needs of the medical and health care community and society at large.

SPECIALIZATIONS

Master's: Bioinstrumentation/Computers, Biomechanics/Biomaterials, Rehabilitation Bioengineering, Systems Physiology

Doctoral: Bioinstrumentation/Computers, Biomechanics/Biomaterials, Functional Imaging, Rehabilitation Bioengineering, Systems Physiology

PROGRAM DESCRIPTIONS

The biomedical engineering program is interdisciplinary in nature, involving the application of engineering and mathematics to the solution of problems related to medicine and biology. The faculty reflect this interdisciplinary nature in their courses and research. Marquette faculty are synergistically complemented by adjunct faculty from the Medical College of Wisconsin. The MU/MCW Center for Biomedical Engineering and Biomathematics fosters collaborative interactions between the two institutions. Research can be characterized by the general areas of bioinstrumentation/computers, biomechanics/biomaterials, rehabilitation bioengineering, and systems physiology. More specific areas of research include: artificial limbs/prostheses, biomaterials, biotelemetry, cell transport and metabolism, cardiac electrophysiology, computers in medicine, functional imaging (magnetic resonance, X-ray), head and spinal cord trauma, hemodynamics, human motion analysis, medical and biological image analysis, physiological signal processing, rehabilitation engineering, systems physiology (cardiovascular, gastrointestinal, musculoskeletal, neuroscience, pulmonary), tele-rehabilitation, tissue engineering, hard and soft tissue biomechanics, and transcutaneous power transfer.

FUNCTIONAL IMAGING SPECIALIZATION — MU/MCW JOINT PROGRAM

Functional imaging is the simultaneous quantification of the structural and functional aspects of a biological system. Modern X-ray, nuclear magnetic resonance, and other means of imaging in relatively noninvasive ways have made functional imaging increasingly practical. The doctoral program in functional imaging, a collaborative effort between Marquette University and the Medical College of Wisconsin, trains students in the use of these new technologies to obtain high-resolution structural, kinematic, and kinetic data from intact organs, and in the use of mathematical modeling to understand the organ physiology.

PREREQUISITES FOR ADMISSION

Students with backgrounds in engineering, physical science, and life science disciplines are eligible for admission to the master of science and doctoral programs in biomedical engineering. A baccalaureate degree in an appropriate area with a minimum grade point average of 3.00 is required. Applicants who do not have an engineering degree must complete prerequisite engineering requirements. The list of prerequisites can be obtained from the department office.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Marquette University Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation.
4. GRE scores (General Test only).
5. A brief statement of purpose that includes the proposed area of research specialization.

6. (*For international applicants only*) a TOEFL score or other acceptable proof of English proficiency.

GENERAL INFORMATION

All admitted students are required to obtain and read the department's *Graduate Student Handbook*, which contains complete details about the biomedical engineering programs and additional departmental degrees. This handbook is available through the Biomedical Engineering Office, (414) 288-3375.

BACHELOR'S-MASTER'S PROGRAM

This program allows students to earn both their master of science degree in biomedical engineering and a bachelor of science degree in five years. Students currently enrolled in the undergraduate biomedical engineering program at Marquette University (with a G.P.A. of 3.50 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. (GRE test scores must be submitted before the start of the fifth year.)

Students may take master's level courses in their senior undergraduate year. These graduate courses count towards both the undergraduate and graduate degrees. The remaining courses are taken during the students' fifth year. Work on the students' theses research begins the summer between the junior and senior years. Students will continue to gain research laboratory experience the summer between the senior and fifth year, continuing through the final year, culminating in preparation of a written thesis and defense. Upon completion of the first term as master's candidates, students must petition the Graduate School to transfer courses taken as undergraduates to the master's degree.

MASTER'S REQUIREMENTS

Upon enrolling in the master's program in biomedical engineering, a student selects his or her area of specialization. Faculty will design a curriculum and research program to address the specific goals of each student. Programs will include course work in engineering, biology, mathematics, and medicine, all of which will be integrated with research laboratory experience.

A master's student must complete 24 credit hours of course work (including three credit hours of physiology) and six credit hours of thesis work. The student also must pass a comprehensive examination and submit an approved thesis.

DOCTORAL REQUIREMENTS

Upon enrolling in the doctoral program in biomedical engineering, a student selects his or her area of specialization. Faculty will design a curriculum and research program to address the specific goals of each student. Programs will include course work in engineering, biology, mathematics, and medicine, all of which will be integrated with research laboratory experience.

The doctor of philosophy degree is conferred in recognition of marked ability and high attainment in the advancement of knowledge and pursuit of truth. The comprehensive

knowledge expected of the student in his or her major field is such that the requirements for the degree usually take no less than four years of full-time work, or the equivalent, beyond the baccalaureate degree.

A doctoral student must complete a program of study prepared in consultation with his or her dissertation adviser and outlined on an approved *Doctoral Program Planning Form*. The program normally requires 60 credit hours of course work beyond the baccalaureate degree (a minimum of 30 credit hours beyond the master's degree) plus 12 credit hours of dissertation work. Doctoral course work must include a minimum of three credit hours of graduate-level physiology. The student also must pass a doctoral qualifying examination and submit and successfully defend a dissertation.

The Doctoral Candidacy Examination consists of both written and oral components. Students entering the doctoral program with a master's degree are required to take the written portion within two terms after entering the program. Students entering the doctoral program with a bachelor's degree are required to take the written portion before or at completion of 30 graduate credit hours or completion of the master's degree, whichever comes first. Each student is expected to complete the oral portion by the end of his or her third year.

The dissertation must represent an original research contribution showing high attainment and clear ability to do independent research. A public defense of the dissertation (the final oral examination) is conducted after the student has completed all other formal requirements for the doctoral degree and has submitted a completed doctoral dissertation to his or her doctoral committee. The dissertation defense is conducted in the form of a department seminar.

Course Descriptions

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

BIEN 112. Embedded Biomedical Instrumentation 3 sem. hrs.

BIEN 151. Topics in Biomedical Engineering 1-3 sem. hrs.

BIEN 152. Analysis of Physiological Models 3 sem. hrs.

BIEN 153. Applied Finite Element Analysis in Biomechanics 3 sem. hrs.

BIEN 157. Intelligent Biosystems 3 sem. hrs.

BIEN 160. Neural Engineering 3 sem. hrs.

BIEN 165. Introduction to Rehabilitation Robotics 3 sem. hrs.

BIEN 167. Rehabilitation Engineering: Telerehabilitation Research Tools 3 sem. hrs.

BIEN 168. Rehabilitation Engineering: Prosthetics, Orthotics, Seating and Positioning 3 sem. hrs.

BIEN 170. Introduction to Biomaterials Science and Engineering 3 sem. hrs.

BIEN 180. Systems Physiology 3 sem. hrs.

BIEN 182. Medical Imaging Physics 3 sem. hrs.

BIEN 183. Cardiopulmonary Mechanics 3 sem. hrs.

BIEN 184. Image Processing for the Biomedical Sciences 3 sem. hrs.

BIEN 187. Biomedical Instrumentation Design 3 sem. hrs.

GRADUATE COURSES:

BIEN 201. Analysis of Physiological Systems 3 sem. hrs.

Introduction to the use of mathematical models in quantifying physiological systems. Model formulation will be analyzed. Applications of analytical and numerical solution techniques and parameter estimation methods. Offered occasionally. *Prereq: BIEN 152.*

BIEN 202. Bioelectric Phenomena 3 sem. hrs.

Electrophysiology of excitable membranes, electromagnetic fields in volume conductors, mathematical models of neural elements and volume conductor fields. Offered alternate years.

BIEN 205. Cellular and Molecular Bioengineering 3 sem. hrs.

Main topics include: cellular biomechanics with an emphasis on the cardiovascular system, molecular bioengineering, biotransport phenomena, and tissue engineering with focus on artificial internal organs. Cellular biomechanics topics covered are biomechanics of the endothelium, endothelial-immune cell interactions, and blood cell structural biomechanics. Topics in molecular bioengineering include chemotaxis and chemokinesis, and modeling of receptor-mediated endocytosis. Biotransport and tissue engineering topics include bioreactor design and the analysis and development of artificial internal organs like the liver and pancreas. Offered occasionally.

BIEN 210. Biofluid Mechanics 3 sem. hrs.

Development of the theory of fluid mechanics as applied to living systems. Both steady and unsteady flows of Newtonian and non-Newtonian fluids will be considered. Topics to be covered include viscometry, blood flow, gas and aerosol flows, pulsatile flow and wave propagation and applications to the understanding of flows in organs and to the measurement of blood pressure and flow. Offered alternate years. *Prereq: BIEN 186 or equiv.; or MEEN 107 or CEEN 151.*

BIEN 212. Biological Mass Transfer 3 sem. hrs.

Development of the theory of mass transfer. Fick's law and free diffusion. Osmosis, facilitated diffusion, active transport, transport across cell membranes and applications to cell biology and organ physiology. Offered alternate years.

BIEN 221. Biomechanical and Biomaterial Systems Analysis 3 sem. hrs.

Using fundamentals of biomaterials engineering and biocompatibility, this course is designed to analyze the functions that organs serve and to analyze the efficacy and safety of artificial organs systems. Some organs/tissues that will be discussed include the kidneys, liver, skeleton, skin, heart, muscles, eyes, and ears. The suitability of state-of-the-art artificial organ systems, including artificial hearts, orthopaedic prostheses, kidney dialyzers, and cochlear devices to fulfill the functions of the replaced organs/tissues will be critically examined. *Prereq: BIEN 170 and BIEN 175.*

BIEN 222. Biomedical Engineering Analysis of Trauma 3 sem. hrs.

An engineering analysis of the physiological changes following impact to the head, spinal cord, and limbs, and electrical events and effects on tissues are treated. Offered occasionally.

BIEN 230. Musculoskeletal Biomechanics 1 3 sem. hrs.

Emphasizes the interrelationship of force and motion as related to anatomic structure and function. The student will become acquainted with the forces and motions acting in the skeletal system and the various techniques used to describe them. Current concepts as revealed in the recent scientific and engineering literature will be highlighted. Topics covered include bone mechanics, joint mechanics, gait kinematics, instrumentation and measurement of biomechanical phenomena, and computer modeling of the musculoskeletal system. Offered alternate years. *Prereq: MEEN 20 or CEEN 20 and MEEN 130 or CEEN 130.*

BIEN 231. Musculoskeletal Biomechanics 2 3 sem. hrs.

Advanced concepts of kinematics and mechanics as they apply to the fields of biomechanics and rehabilitation. Aspects of gait, bone and joint surgery, and soft tissue surgery will be covered. Detailed study of joint mechanics, implant applications and mobility device function will be performed. Includes advanced analysis and modeling as well as laboratory-based final project. Offered alternate years. *Prereq: BIEN 230.*

BIEN 232. Applied Finite Element Analysis in Biomechanics 1 3 sem. hrs.

Introduction to finite element analysis as applied to linear, static problems. Application to problems in plane strain, plane stress, and axisymmetry. Development of shape functions and element stiffness matrices. Although primarily structural analysis, will also consider problems in heat transfer and fluid mechanics. Use of user-written and packaged software. Offered fall term, alternate years. *Prereq: CEEN 130 or MEEN 130; and Matrix/Linear Algebra or equiv.*

BIEN 233. Applied Finite Element Analysis in Biomechanics 2 3 sem. hrs.

Advanced finite element analysis as applied to nonlinear (both material and geometric nonlinearities), dynamic problems. Use of penalty methods and perturbed Lagrangian methods. Use of user-written and packaged software. Critical reviews of finite element analysis in biomechanical research. Offered occasionally. *Prereq: BIEN 232; or CEEN 245 or equiv.*

BIEN 235. Biomechanics of the Spine

3 sem. hrs.

Analyzes the anatomical and functional relationships among the hard and soft tissue structures of the spine as a function of vertebral column development, aging, disease and trauma. Emphasis will be given to the mechanisms of external and internal load transfer. Imaging (e.g. CT), experimental and finite element methods will be used to study the effects of physiologic/traumatic loading, surgery and spinal disorders. Current advancements in biomechanical/clinical literature will be discussed. Offered occasionally.

BIEN 237. Neuromotor Control 3 sem. hrs.

Overview of current issues in neuromotor control and movement biomechanics. Special emphasis on the study of normal and impaired human movement. Topics include: muscle mechanics, biomechanics of movement, neural circuitry, strategies for the neural control of movement (including a discussion of adaptation and motor learning) and potential applications of biomedical engineering techniques to the study and improvement of impaired motor function. Offered occasionally. *Prereq: BIEN 155 which may be taken concurrently or equiv.; or cons. of instr.*

BIEN 240. Biomedical Instrumentation

3 sem. hrs.

Relationships between instruments for physiologic measurement and monitoring with living systems are explored. Physiologic signals, noise, and available sensors and transducers and their characteristics are discussed from time and frequency domain points of view. Systems topics include various new and conventional medical instrumentation. Other topics include clinical and new clinical laboratory instrumentation, instrumentation for research, artificial organs and prostheses. Includes the use of scientific literature, literature searches, design projects, computer projects. Offered alternate years. *Prereq: BIEN 180; or BIEN 187; and high level computer language or equiv.*

BIEN 241. Microprocessor Based**Biomedical Instrumentation** 3 sem. hrs.

Discusses the application of microprocessors, microcontrollers, and digital signal processors to biomedical instrumentation. Designed to complement BIEN 240, which covers transducers, sensors, analog signal conditioning, and analog to digital conversion. The emphasis will be on evaluating the memory, power, resolution, cost, and computational requirements of a particular application, and then selecting a type (microprocessor, microcontroller, or digital signal processor) and particular model of processor to satisfy the system requirements. The students will design at least two complete processor based systems. Offered occasionally. *Prereq: Knowledge of digital electronics and microprocessors.*

BIEN 242. Radio Frequency Applications in Biomedical Engineering 3 sem. hrs.

Radio frequency design and applications for biomedical engineering and medicine. Circuit elements, equivalent circuits, impedance transformations, Smith Chart, two ports, scattering parameters, amplifiers, resonant circuits, mixers, receivers. Applications include telemetry, transcutaneous power transfer, hyperthermia, rf ablation, magnetic resonance imaging; HP-EESOF LIBRA and Ascent CAD are introduced as analysis and design tools. Guest speakers. Written and oral design reports. Offered occasionally. *Prereq: Undergraduate background in circuit theory and analog electronics.*

BIEN 249. Advanced Topics in Biomedical Instrumentation 3 sem. hrs.

Advanced topics in design and analysis of biomedical instruments, devices and interfaces. Project approach drawing from current literature and current projects of laboratories of affiliated institutions. Topics include bioelectronics, biomechanics, biomaterials, and rehabilitation engineering. Offered occasionally.

BIEN 250. Biomedical Signal Processing

3 sem. hrs.

Introduces students to statistical processing of biomedical data. Topics include: data acquisition, probability and estimation, signal averaging, power spectrum analysis, windowing, digital filters and data compression. Students will complete several computer projects which apply these processing methods to physiologic signals. Offered alternate years. *Prereq: MATH 83; and proficiency in C or FORTRAN.*

BIEN 251. Advanced Biomedical Signal Processing 3 sem. hrs.

Covers modern methods of Signal Processing encountered in the bio-medical field including parametric modeling, modern spectral estimation, multivariate analysis, adaptive signal processing, decimation/interpolation, and two-dimensional signal analysis. There will be several computer projects which apply these modern techniques to physiologic data. Offered occasionally. *Prereq: BIEN 250 or equiv.; knowledge of C or FORTRAN.*

BIEN 252. Multidimensional Biomedical Time Series Analysis 3 sem. hrs.

Theory and implementation of methods used to collect, model and analyze multidimensional time series encountered in biomedical applications such as functional imaging, electrophysiologic mapping and the study of physiologic control systems. Offered occasionally. *Prereq: BIEN 250; proficiency in C or FORTRAN.*

BIEN 259. Advanced Topics in Biomedical Computing 3 sem. hrs.

Application of signal processing, information management, modeling and artificial intelligence techniques in biomedical research and clinical environments. Project approach drawing from current literature and data from laboratories of affiliated institutions. Typical projects include analysis of serially recorded neurophysiologic data, development and solution of physiologic models, application of artificial intelligence to ordering of diagnostic terminology. Offered occasionally.

BIEN 265. Mathematics of Medical Imaging 3 sem. hrs.

Begins with an overview of the application of linear systems theory to radiographic imaging (pinhole imaging, transmission and emission tomography), and covers the mathematics of computed tomography including the analytic theory of reconstructing from projections and extensions to emission computed tomography and magnetic resonance imaging. Topics may also include three-dimensional imaging, noise analysis and image quality, and optimization. Contains advanced mathematical content. Offered occasionally.

BIEN 268. Rehabilitative Biosystems

3 sem. hrs.

Examines the plastic changes in biological systems that occur in response to targeted stimuli. These processes involve responses by cells to chemical, mechanical, or electrical stimuli (which may be related), which may be influenced or directed using engineering techniques. Examines the homeostasis of physiologic systems and their response to pathologic and rehabilitative stimuli. Examines engineering applications involving the diagnosis and rehabilitation of musculoskeletal, neurologic and cardiopulmonary biosystems in the context of the underlying cellular mechanisms. *Prereq: BIEN 180 which may be taken concurrently and PHYS 4.*

BIEN 269. Modeling Rehabilitative Biosystems 3 sem. hrs.

Introduces students to large-scale mathematical models of various physiological systems of interest in rehabilitation (e.g., cardiovascular, pulmonary, musculoskeletal, etc.). Mathematical modeling is a widely used tool for testing hypotheses regarding the underlying mechanisms of complex systems such as physiological systems in health, disease and recovery. For each, simulation is used to further our understanding of the adaptive processes of these systems in response to physiological/pathophysiological stresses and rehabilitative interventions. *Prereq: BIEN 152 and BIEN 180.*

BIEN 289. Topics in Biomedical Engineering

3 sem. hrs.

Subject matter variable as determined by needs of biomedical graduate students. Students may enroll more than once as the subject matter changes. Possible topics: biostatistics, experimental methods, neuro-anatomy, etc. Offered occasionally.

BIEN 295. Independent Study 1-3 sem. hrs.

Offered every term. *Prereq: Cons. of instr. and cons. of dept. ch.*

BIEN 297. Department Seminar 0 sem. hrs.

Scholarly presentations on current topics in biomedical engineering and related areas by visiting professors, resident faculty and graduate students. Attendance is required of all full-time graduate students. Offered every term. S/U grade assessment. Mandatory for all full-time BIEN graduate students.

BIEN 299. Master's Thesis 1-6 sem. hrs.

Offered every term. *Prereq: Cons. of instr.*

BIEN 300. Human Physiology 8 sem. hrs.
Human physiology describes the normal function of cells and organs systems, laying a foundation for understanding the altered physiologic states of specific disease entities and human organism. Computer-simulated laboratory experiences, animal labs and discussion groups reinforce concepts. Offered at the Medical College of Wisconsin. Variable weekly schedule. (Course generally begins in the first week of January.) For planning purposes, MU students must register by December 15 of the previous year. *Prereq: Cons. of dept. ch.; taught at the Medical College of Wisconsin.*

BIEN 396. Seminar 0-3 sem. hrs.
Offered occasionally.

BIEN 398. Special Topics in Life Sciences
1-9 sem. hrs.

A graduate-level course in selected areas of the life sciences offered at the Medical College of Wisconsin. May be taken for credit by students enrolled in the Ph.D. degree program in biomedical engineering at Marquette University. No more than three 398 courses may be included in the required minimum course work in the Ph.D. program. The schedule of classes often will be variable and may depend on the course. *Prereq: Cons. of dept. ch.*

BIEN 399. Doctoral Dissertation
1-12 sem. hrs.
Offered every term. *Prereq: Cons. of instr.*

BIEN 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.
Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

BIEN 892. Continuous Enrollment — Half-Time 0 sem. hrs.
Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

BIEN 893. Continuous Enrollment — Full-Time 0 sem. hrs.
Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

BUSINESS ADMINISTRATION

Dean and Professor: Shrock
Executive Associate Dean and Associate Professor of Economics: McGibany
Assistant Dean of Business Administration; Co-Director, Kohler Center for Entrepreneurship; Assistant Professor: Konz, S.J.
Assistant Dean for Graduate Programs and Assistant Professor: Simmons
Assistant Dean for Undergraduate Programs: Terrian
Director of Career Management: Stankowski
Director of International Business Studies and Associate Professor: Hosseini
Director of the EMBA Program: Simmons
Director of Student Services: Nelson
Directors of the Institute for Global Economic Affairs: Daniels, Toumanoff
Coleman Chairholder in Entrepreneurship; Co-Director, Kohler Center for Entrepreneurship; Associate Professor: Stewart
Director of the Golden Angels Network and Entrepreneur-in-Residence: Keane
Robert B. Bell, Sr. Chair in Real Estate and Professor: Eppli
Director of the Applied Investment Management Program: Krause
Director of External Relations: Bernhard
Chairperson and Charles T. Horngren Professor of Accounting: Akers
Donald Flynn Chair and Professor of Accounting: Giacomino
Chairperson and Associate Professor of Economics: Clark
Acting Chairperson and Associate Professor of Finance: Peck
Chairperson and Professor of Management: Cotton
Chairperson and Professor of Marketing: Akhter
Reverend Chaplain: Rev. Thomas Brennan, S.J.
Professor: Akers, Akhter, Andrews, Bausch, Brownlee (*Emeritus*), Brush, Chowdhury, Cotton, Danner (*Emeritus*), Doney (*Emeritus*), Durvasula, Eppli, Giacomino, Keaveny, Lacznak, Lysonski, T.R. Martin (*Dean Emeritus*), Nourzad, Probst (*Emeritus*), Smiley (*Emeritus*)
Associate Professor: Bauer, Breeden, Clark, Crane, Daniels, Garrett, Hosseini, Hunter, Inderrieden, Kaiser, Kim, Kutner, Maranto, McGibany, Naples, Peck, Rehbein, Robinson, Seifert, Srivastava, Stewart, Syam, Toumanoff, Trebby, Yahr
Assistant Professor: Adya, Cotteleer, DeWally, Griffin, Konz, S.J., Lee, Mascha, O'Neill, Ow, Prucyk, Simmons, Stankowski, Wang, Yakusheva
Visiting Assistant Professor: Kohls
Adjunct Assistant Professor: Collins, Dole, Krause
Instructor: Terrian
Adjunct Instructor: Gruber, Kren, Muraski, Rau, Schwiesow, Voelker
Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREES OFFERED

Master of Science in Accounting (M.S.A.), Plan B only
Master of Business Administration (M.B.A.), including the Executive M.B.A. program, Plan B only
Master of Science in Applied Economics (M.S.A.E.), Plan B only
Master of Science in Engineering Management (M.S.E.M.), Plan B only
Master of Science in Human Resources (M.S.H.R.), Plan B only
Master of Science in Healthcare Technologies Management (M.S.), Plan B only

SATISFACTORY PERFORMANCE

All students are expected to maintain satisfactory performance in their progress toward their degree. Accordingly, the graduate program director reviews all student grades at the end of each academic session. This review includes all work that was attempted as well as completed. Students are expected to maintain a grade point average of 3.00 or above for satisfactory performance in and graduation from the M.S.A., the M.B.A., the M.S.A.E., the M.S.H.R., the M.S.E.M., or the M.S. in HCTM program. When a student falls below the satisfactory progress level, appropriate recommendations are made to the vice provost for research and dean of the Graduate School. In addition to academic performance, students are expected to display the highest levels of personal and professional integrity as they interact with the university, faculty, staff, and one another. Serious breaches of integrity may subject the student to disciplinary action, including expulsion from the university.

ACCOUNTING (ACCO)

DEGREE OFFERED

Master of Science in Accounting, Plan B only

PROGRAM DESCRIPTION

The master of science in accounting (M.S.A.) program is designed to provide students with the broad range of skills that successful accounting professionals need in today's complex and changing business environment. Courses emphasize technical knowledge in the functional areas of accounting, stress communication skills, and promote awareness of the accountant's ethical and social responsibilities. The M.S.A. program meets the American Institute of Certified Public Accountants (AICPA) requirement for individual membership in that organization, and eligibility to take the CPA examination. The M.S.A. program is accredited by the Association for the Advancement of Collegiate Schools of Business (AACSB-International) and reflects the high standards and expectations of that accreditation.

PREREQUISITES FOR ADMISSION

Admission to the M.S.A. program requires: a) a four-year bachelor's degree from an accredited college or university with a major in accounting or equivalent undergraduate course work; b) an acceptable record of academic achievement at the bachelor's level and in any

previous graduate course work; c) acceptable scores on required admission tests; and d) an overall composite profile of admission data (including an evaluation of previous work experience) that predicts success in the program.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Essay questions on the application form.
3. Official transcripts from all current and previous colleges/universities except Marquette.
4. Official test scores from the Graduate Management Admission Test (GMAT).
5. Resume or job profile.
6. *(For international applicants only)* three letters of recommendation and an official TOEFL score or other acceptable proof of English proficiency.

Note: Temporary non-degree applicants (admission valid for one term only) must submit all of the above, except the GMAT scores.

Students are encouraged to complete all application materials and apply for degree status. Temporary status is valid for one semester only. Temporary non-degree status students are not eligible to continue taking M.S.A. classes beyond one semester without degree admissions. Typically, non-degree admission is not recommended in the M.S.A. program.

BACHELOR'S-MASTER'S PROGRAM

This five-year program allows students to earn both their master of science in accounting (M.S.A.) and an undergraduate degree from the College of Business Administration. Undergraduate students begin their graduate work in their senior year by taking two graduate level courses.

These graduate courses double-count toward the undergraduate and graduate degrees. Should a student be denied admission to the M.S.A. program, the courses will be counted toward the undergraduate degree only. Upon completion of the first term as a master's candidate, the student must petition the Graduate School to transfer the courses taken as an undergraduate to the master's degree.

To be considered for admission to the five-year program, applicants must formally apply to the Graduate School during their senior year at Marquette University, complete all of the application requirements as listed above, and indicate on their application that they are applying for the five-year program. For information, contact the Accounting Department at (414) 288-7340, or send an e-mail to james.trebbly@marquette.edu.

MASTER'S REQUIREMENTS

The M.S.A. program requires a minimum of 30 credit hours: 18 hours of accounting courses (nine hours required and 9-12 hours of electives) and 9-12 hours of non-accounting courses.

The course work involves six functional areas of accounting: financial, managerial, taxation, systems, auditing, and governmental/not-for-profit.

M.S.A. PROGRAM DETAILS

REQUIRED COURSE WORK

Accounting

- ACCO 222 Corporate and Not-for-Profit Reporting Issues
- ACCO 233 Auditing: Ethical, Legal, Professional, and Reporting Responsibilities
- ACCO 235 Taxation of Corporations and Partnerships

ELECTIVE COURSE WORK

Accounting

(9-12 credit hours required)

- ACCO 232 Advanced Cost Management
- ACCO 240 Analysis of Corporate Financial Statements
- ACCO 241 International Accounting
- ACCO 242 Tax Research Seminar
- ACCO 243 Accounting Theory
- ACCO 244 Accounting Information Systems
- ACCO 246 Governmental Accounting
- ACCO 247 International Taxation
- ACCO 248 State and Local Taxation
- ACCO 249 Fraud Examination
- ACCO 250 Capstone Case Course in Financial Accounting
- ACCO 296 Seminar in Accounting

Business

(9-12 credit hours required)

Select from other graduate-level business (BUAD) courses or, with the permission of the program director, other graduate-level non-business courses excluding BUAD 201-205, 230, 231, 239 and 263.

COURSE DESCRIPTIONS

UPPER DIVISION COURSE THAT MAY CARRY GRADUATE CREDIT:

- ACCO 110. Accounting Communications 3 sem. hrs.

GRADUATE COURSES:

ACCO 222. Corporate and Not-for-Profit Reporting Issues 3 sem. hrs.

Study of business combinations (mergers, consolidations, and acquisitions of net assets of common stock). Construction of consolidated financial statements, including analysis of inter-company transactions. Introduction of international accounting issues. Accounting for colleges and universities and health care, voluntary health and welfare, and other not-for-profit organizations. *Prereq: Enrolled in the Graduate School and ACCO program, and cons. of M.S.A. prog. dir.*

ACCO 232. Advanced Cost Management 3 sem. hrs.

Develops an understanding of accounting as a financial information system. Cost accounting is designed to structure financial information so as to assist management in decision making. As a result, course has a decision orientation which is important for students who seek careers in either profit-motivated or not-for-profit organizations. *Prereq: Cons. of M.S.A. prog. dir.*

ACCO 233. Auditing: Ethical, Legal, Professional, and Reporting Responsibilities 3 sem. hrs.

Focuses on major issues in auditing and the recent pronouncements of authoritative bodies. Specific attention is given to the professional code of conduct, legal liability, study and evaluation of the internal control structure, EDP systems, statistical sampling and reporting responsibilities for attest and nonattest engagements. *Prereq: Enrolled in the Graduate School and ACCO program, and cons. of M.S.A. prog. dir.*

ACCO 235. Taxation of Corporations and Partnerships 3 sem. hrs.

Partnership and corporation income tax laws studied for proper treatment of various types of income, deductions, the consequences of ownership interests and the application of various tax rates to taxable situations. *Prereq: Enrolled in Graduate School and ACCO program.*

ACCO 240. 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 flows, capital structure, return on investment, operating performance, and asset utilization. Effects of alternative accounting methods and footnote disclosures. *Prereq: Enrolled in Graduate School and ACCO program, and cons. of M.S.A. prog. dir.*

ACCO 241. International Accounting 3 sem. hrs.

Overview of managerial and financial accounting issues faced by multinational corporations or firms involved in international business. Issues include diversity of worldwide accounting principles and prospects for uniform international accounting standards, foreign currency transactions and translation inflation, 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: Enrolled in Graduate School and ACCO program, cons. of M.S.A. prog. dir. and cons. of dept. ch.*

ACCO 242. Tax Research Seminar 3 sem. hrs.

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 research to a specific situation. *Prereq: Enrolled in Graduate School and ACCO program, and cons. of M.S.A. prog. dir.*

ACCO 243. Accounting Theory 3 sem. hrs.

Analysis of the theoretical structure underlying financial accounting. Emphasis directed toward its development from both normative and descriptive approaches. Relates accounting theory to the basic financial statements and to selected topical areas. Examination of current issues under study by Financial Accounting Standards Board. *Prereq: Enrolled in Graduate School and ACCO program, and cons. of M.S.A. prog. dir.*

ACCO 244. 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 the transaction processing cycle, using a 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: Enrolled in Graduate School and ACCO program, and cons. of M.S.A. prog. dir.*

ACCO 246. Governmental Accounting 3 sem. hrs.

Study of accounting principles for state and local governmental units as promulgated by the Governmental Accounting Standards Board and the related financial reporting and disclosure requirements. Examination of objectives of financial reporting of these entities and the theoretical structure underlying these principles. Introduction to federal government accounting and audits of governmental units. *Prereq: Enrolled in Graduate School and ACCO program, and cons. of M.S.A. prog. dir.*

ACCO 247. 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: Enrolled in Graduate School and ACCO program, and cons. of M.S.A. prog. dir.*

ACCO 248. State and Local Taxation 3 sem. hrs.

Taxable incidents and multiple taxation under the Commerce Clause of the United States Constitution; current tax developments under the Import-Export clause of the United States Constitution; allocation and apportionment formulas; and multi-state tax compact. *Prereq: Enrolled in Graduate School and ACCO program, and cons. of M.S.A. prog. dir.*

ACCO 249. Fraud Examination 3 sem. hrs.
An analysis of how and why fraud is committed, how fraudulent conduct can be deterred and how allegations of fraud should be investigated and resolved. *Prereq: Enrolled in Graduate School and cons. of M.S.A. prog. dir.*

ACCO 250. Capstone Case Course in Financial Accounting 3 sem. hrs.

Uses "real world" cases to expose students to current issues in financial accounting. It covers current accounting standards, the conceptual framework and issues before the EITF, and SEC Staff Accounting Bulletins. *Prereq: ACCO 122 or ACCO 222; Or enrolled in the M.S.A. program.*

ACCO 295. Independent Study 1-3 sem. hrs.
Prereq: Enrolled in Graduate School and ACCO program; cons. of M.S.A. prog. dir.

ACCO 296. Seminar in Accounting 2-3 sem. hrs.

Elective. Topics vary. Offered occasionally. *Prereq: BUAD 230 and enrolled in the M.S.A. program or cons. of prog. dir.*

BUSINESS ADMINISTRATION (BUAD)

DEGREE OFFERED

Master of Business Administration, Plan B only

SPECIALIZATIONS

A specialization is not required in the M.B.A. program, and earning a specialization does not alter, in any way, the degree awarded. For those interested, however, specializations are available in several areas of study: e-Business, Economics, Finance, Human Resources, International Business, Management Information Systems, Marketing, and Total Quality Management. The specialization is noted on the student's official university transcript. To earn a specialization, a student, in addition to meeting all requirements for foundation and core course work, must take their electives from among the prescribed courses approved for the chosen specialization. A comprehensive list of approved specializations and the requisite course work is available from the M.B.A. program director or via our Web site at www.marquette.edu/business. The student must earn a grade of B or above in each of the prescribed electives, and all electives applied toward a specialization must be taken at Marquette University.

Graduates of the M.B.A. program may pursue a specialization within five years of graduation. To obtain additional information regarding this opportunity, contact the M.B.A. office at (414) 288-7145 or e-mail MBA@marquette.edu.

PROGRAM DESCRIPTION

The objective of the M.B.A. program at Marquette University is to provide students with a broad professional education in preparation for responsible managerial positions in business, public service, or education. The program is built upon the foundations of quantitative analysis, behavioral sciences, economics, and management theory.

Emphases of the program include an understanding of business problems and the development of managerial skills. The M.B.A. program is accredited by the Association for the Advancement of Collegiate Schools of Business (AACSB—International) and reflects the high standards and expectations of that accreditation.

PREREQUISITES FOR ADMISSION

Admission to the M.B.A. program requires: a) a four-year bachelor's degree from an accredited college or university; b) an acceptable record of academic achievement at the

bachelor's level and in any previous graduate course work; c) acceptable scores on required admission tests; and d) an overall composite profile of admission data (including an evaluation of previous work experience) that predicts success in the program.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Essay questions on the application form.
3. Official transcripts from all current and previous colleges/universities except Marquette.
4. Official test scores from the Graduate Management Admission Test (GMAT).
5. Resume or job profile.
6. *(For international applicants only)* three letters of recommendation and an official TOEFL score or other acceptable proof of English proficiency.

Note: Temporary non-degree applicants (admission valid for one term only) must submit all of the above, except the GMAT scores.

Students are encouraged to complete all application materials and apply for degree status. Temporary status is valid for one semester only. Temporary non-degree status students are not eligible to continue taking M.B.A. classes beyond one semester without degree admission. Typically, non-degree admission is not recommended in the M.B.A. program.

OFF-CAMPUS PROGRAMS

The M.B.A. program currently offers the M.B.A. program at two off-site locations: Kohler, Wisconsin and Waukesha, Wisconsin. Although the programs have some collaboration with local companies, students from all companies are welcome to apply. Admission to these programs is for fall only. As a 'lock-step – cohort group' there are ideally no new entries into the program once the group has matriculated. Students will take all classes together from matriculation to graduation. Classes meet one night a week each fall, spring and summer term. Currently, the Kohler program is completed in 33 months, and the Waukesha program is completed in 28 months. If a student is unable to continue with the group, he/she can complete remaining program requirements at the Marquette University campus. For additional information on either program, contact the M.B.A. office at (414) 288-7145, e-mail MBA@marquette.edu, or visit our Web site at www.marquette.edu/business.

JOINT PROGRAMS OF STUDY M.B.A.-J.D. DEGREE

The College of Business Administration, in conjunction with the Law School, offers a program of joint study leading to an M.B.A. degree and a juris doctor degree. Students seeking admission to the joint program must apply to both the Graduate School and the Law School and must meet the admission requirements for each. Students start this joint program as a law student. Upon completion of the law program, students will be officially admitted to the M.B.A. program for completion of the remainder of the joint program.

Joint program students complete 81 credit hours in the Law School and 28 Business credit hours beyond required foundation courses in

the M.B.A. program. Up to 21 hours of an M.B.A.-J.D. student's course work will count jointly toward both degrees (12 hours of Law School credits may be applied to M.B.A. requirements and as many as nine hours of M.B.A. credits may be applied to J.D. elective requirements). All transfer courses from the Marquette University Law School must have a C or above grade. Joint program students must maintain a 3.00 grade point average to graduate with the M.B.A. degree. LAW 434 Cyberlaw or LAW 493 Current Issues in Intellectual Property and Technology Law (Computer Law) is encouraged for all students pursuing joint M.B.A.-J.D. degrees. LAW 434 or LAW 493 may satisfy both an elective in the law program and will satisfy the IT/e-Business Core Elective requirement. Students are strongly encouraged to seek advising from both programs.

A specialization in sport business is available to students admitted to the joint M.B.A.-J.D. program, as well as to students in the sports law program in the Law School. Twelve credits of specific sports law courses will apply toward the M.B.A. degree. Students must take Amateur Sports Law or Professional Sports Law and two sports law workshops, along with Cyberlaw or Computer Law, which will also satisfy the M.B.A. IT/e-Business Elective Core requirement.

In general, joint program students will pay tuition at the full-time (flat tuition) Law School rate while a full-time law student, regardless of whether or not they are taking additional graduate courses. Upon receiving the juris doctor degree, joint program students will pay Graduate School tuition at the per credit rate for graduate courses. Part-time law students will pay the per credit Law School rate for all courses.

HEALTHCARE TECHNOLOGIES MANAGEMENT (HCTM)

The Healthcare Technologies Management Program is a collaborative effort between Marquette University and the Medical College of Wisconsin that combines education in business and biomedical engineering. The objective of this master's program is to educate professionals capable of managing the design, development, commercialization, and regulatory compliance of diagnostic and therapeutic medical devices, and the implementation, utilization, and assessment of hospital-based healthcare technologies.

Healthcare institutions, medical device companies, and healthcare consulting firms have a growing need for skilled professionals with technical and managerial skills, and an understanding of healthcare delivery and regulatory environments. Graduates of the program will have the education and skills needed to pursue career opportunities in clinical, industrial, and consulting environments. The program meets the needs of recent undergraduates seeking an advanced degree as well as employed engineers interested in opportunities for career advancement.

Elective courses, independent study projects, and internship opportunities enable students to customize their training to meet individual needs, interests, and career goals. With the assistance of a faculty and industry/clinical adviser, students are required to design and complete an applied biomedical engineering

project. This independent study/internship experience will help develop skills that will be useful in the clinical or industrial environment.

The course offerings and schedules are designed to allow working students to pursue this M.S. degree on a part-time basis. Full-time students can complete the program in three terms (12 months). Course topics include technology assessment, ethics of technology utilization, standards and regulations, product development, and the environment of healthcare delivery. Topics of study include health care technology assessment, development, and evaluation, ethics of technology utilization, and outcomes and medical effectiveness research.

Additional details concerning the master of science degree in healthcare technologies management are listed under the Biomedical Engineering section of this bulletin.

M.B.A.-M.S.N. DEGREE

The College of Business Administration, in conjunction with the College of Nursing, offers a program of joint study leading to an M.B.A. degree and an M.S.N. degree with a specialization in Health Care Systems Leadership. Students seeking admission to the joint program apply to the Graduate School and must meet the admission requirements for both the M.B.A. and M.S.N. programs. However, official test scores from the Graduate Management Admission Test (GMAT) may substitute for the GRE admission requirement in the College of Nursing. Because students are officially admitted into only one Marquette University graduate program at a time, applicants must indicate which program they intend to pursue and complete first, although once accepted for admission to both programs, students may take courses from both departments. Upon completion of the first program, the student will be officially admitted to the second program for completion of the remainder of the joint program.

Joint program students complete a total of 60 credits, including 6 credits of M.B.A. foundation courses (BUAD 201, BUAD 202, BUAD 203), 12 credits of Nursing core courses (NURS 200, NURS 207, NURS 209, NURS 291), 24 credits of M.B.A. core courses (BUAD 210, BUAD 220, Quantitative Methods [see M.B.A. elective core options], BUAD 230, BUAD 240, BUAD 250, BUAD 262, BUAD 290), and 18 credits of Health Care Systems Leadership courses (HEAL 220, HEAL 241, HEAL 246, HEAL 248, NURS 244, NURS 247). A comprehensive examination in the nursing content area is required. BUAD 290, Strategic Management in a Global Economy, serves as the final integrating experience for the business content area. BUAD 290 may be taken only after completing all other core course requirements.

M.B.A.-M.A. DEGREE

The College of Business Administration, in conjunction with the Department of Political Science, offers a program of joint study leading to a master of business administration (M.B.A.) degree and a master of arts (M.A.) degree with a focus on political science or international affairs. The program is designed for students whose interests overlap business and politics or business and international affairs. Joint degree students are able to complete both

degree programs in less time than if both degrees were pursued separately.

Students seeking admission into the joint degree program must submit to the Graduate School separate applications for admission to both programs, including two sets of required documentation, and must meet the admission requirements of each program. The College of Business requires the GMAT test scores. Both programs in political science and international affairs will accept GMAT scores in lieu of GRE scores. Acceptance into one program does not guarantee acceptance into the other. If a student is accepted into one program and not the other, the student can still choose to accept the admission offer from the first program but would not be considered a joint degree student. Because students are officially admitted into only one Marquette University graduate program at a time, applicants must indicate which program they intend to pursue and complete first, although once accepted for admission to both programs, students may take courses from both departments. Upon completion of the first program, the student will be officially admitted to the second program for completion of the remainder of the joint program.

Joint degree students count 9 credits of course work in each program toward the required course work credits of the other program. Thus, 9 of the 40 credits required for the master of business administration degree will come from POSC courses, and 9 of the 30 credits required for the master of arts degree in political science or in international affairs will come from BUAD courses.

The number of required credit hours for the master of business administration degree might be as high as 50 credit hours if the student is not exempted from foundation courses on the basis of undergraduate studies.

Students must identify the courses being applied toward both degrees prior to completion of the programs by contacting their advisers in both programs.

MASTER'S REQUIREMENTS

The M.B.A. program requires a minimum of 40 credits of course work and a maximum of 50 credits of course work (this number may be reduced to 34 or 37 hours if exemptions to core courses are granted based upon the applicant's undergraduate record and major field of study).

The course work covers four distinct areas:

1. Foundation Courses (10 credits)
2. Core Courses (18 credits)
3. Elective Core Courses (12 credits)
4. Elective Courses — Normally chosen from the various graduate electives (10 credits).

The program does not require a thesis, essay, or comprehensive examination. Instead, BUAD 290, Strategic Management in a Global Economy, serves as the final integrating experience in the program. BUAD 290 may be taken only after completing all other core and elective core course requirements.

M.B.A. PROGRAM DETAILS

FOUNDATION COURSES

The foundation of the M.B.A. program consists of the five graduate courses (10 credits) listed below. A student can be exempted from foundation course requirements if he or she has recently completed equivalent course work,

with satisfactory grades, as part of a degree program accredited by the AACSB—International or other regionally accredited program specifically recognized by the College of Business Administration. Undergraduate courses would qualify routinely for exemptions if taken as part of the core or elective requirements of a degree program that was completed within the 10 years preceding application to the Marquette M.B.A. program.

BUAD 201 Economics Foundations
 BUAD 202 Accounting Foundations
 BUAD 203 Mathematics Foundations
 BUAD 204 Statistics Foundations
 BUAD 205 Information Technology Foundations

CORE COURSE WORK

The core of the M.B.A. program consists of the 6 graduate courses (18 credits) listed below. Students are expected to observe prerequisite sequencing requirements within the core area. We also suggest taking the core courses in the stated sequence, when possible. In addition, students should have completed all foundation course requirements before enrolling in core courses.

BUAD 210 Managerial Economics
 BUAD 220 Operations and Supply Chain Management
 BUAD 230 Managerial Accounting
 BUAD 240 Marketing Management
 BUAD 250 Financial Management
 BUAD 262 Organizational Behavior

ELECTIVE CORE COURSE WORK

There are four elective core areas in the M.B.A. program. Within each elective core area, students will choose one three-credit course from those listed to fulfill the elective core requirement. The four elective core areas are: Quantitative Methods; Information Technology and eBusiness; Social, Ethical and Political Environment of Business; and Business Strategy.

Courses that satisfy the elective core components are:

Quantitative Methods (3 credits required)

Choose one course from the following list.
 BUAD 224 Quantitative Decision Modeling and Analysis
 BUAD 243 Advanced Multivariate Data Analysis
 BUAD 249* Seminar in Marketing: Marketing Research
 BUAD 253 Fixed Income Markets and Securities
 BUAD 255 Financial Derivatives
 ECON 201 Applied Econometrics

Information Technology/e-Business (3 credits required)

Choose one course from the following list.
 BUAD 229* Seminar in Operations and Supply Chain Management: e-Business and Supply Chain Management
 BUAD 244 Direct Marketing and e-Commerce
 BUAD 249* Seminar in Marketing: Internet Marketing or e-Marketing Strategy
 BUAD 270 Information Technology Strategy
 BUAD 272 Decision Support Systems
 BUAD 273 Telecommunications
 BUAD 274 Database Management
 BUAD 279 Seminar in Information Technology (3 credits)

COSC 158 Software Design and Analysis (taken for graduate credit)
 LAW 434 Cyberlaw**
 LAW 493 Current Issues in Intellectual Property and Technology Law (Computer Law)**

MSCS 236 Component Architecture
 MSCS 237 Distributed Computing
 MSCS 238 Enterprise Architecture
 MSCS 239 Information Representation
 MSCS 282* Topics in Computer Science: Computer Security
 HURE 250 Human Resources Information Systems
 ACCO 244 Accounting Information Systems

Social, Ethical, Political Environment (3 credits required)

Choose one course from the following list.
 BUAD 263 Variable Topics in the Global Environment of Business
 BUAD 249* Seminar in Marketing: Ethics & Social Responsibility
 BUAD 259 Seminar in Finance: Investment Management, Ethics and Security
 BUAD 260 Ethical Issues, Regulatory Environment and Human Resource Management
 PHIL 301 Seminar: Business Ethics
 ACCO 233 Auditing: Ethical, Legal, Professional, and Reporting Responsibilities

* Special attention must be given to the multi-topics courses: BUAD 229, BUAD 249, BUAD 259, and MSCS 282, etc. Only the topics listed above will apply toward the Core Elective requirement.

** Law classes may have specific prerequisites that must be met, including approval from the Law School, prior to registration for law courses.

Business Strategy (3 credits required)

Choose one section of BUAD 290 Topics in Strategic Management in a Global Economy; all sections of this course fulfill this requirement. The various sections focus on strategic management in traditional corporations, strategic management in small businesses, including entrepreneurial efforts, and strategic management with an emphasis on the use of technology.

For additional information contact the M.B.A. office at (414) 288-7145, e-mail us at MBA@marquette.edu, or visit our Web site at www.marquette.edu/business.

ELECTIVE COURSE WORK

In selecting the 10 credit hours of required elective course work, the M.B.A. student has a variety of choices. Electives may be concentrated in one area of business, e.g., marketing, or they may be distributed over several areas. Courses chosen from Marquette's graduate programs in accounting, economics, and human resources are routinely approved for elective credit in the M.B.A. program. With prior approval from the M.B.A. program director, an M.B.A. student may choose, as electives, graduate courses from non-business fields in which he or she has the appropriate undergraduate background to enter graduate level courses.

One credit of the electives is required to be a Skills course. All Skills courses are numbered

BUAD 291. Up to four credits of the electives may be in the Skills area. Skills electives are in various areas such as team building, communication skills, etc.

COURSE DESCRIPTIONS

The following courses require students to be enrolled in the ACCO, BUAD, ECON, HURE, HCTM, ENMA or NURS programs.

GRADUATE COURSES:

BUAD 201. Economics Foundations

2 sem. hrs.

Principles, analytic concepts, and techniques of the economic way of thinking, applied to consumer choice, resource use, and the firm's pricing, hiring, and production decisions. The operation of markets and the economic role of government. Determinants of aggregate production, employment, and the price level. Offered every term.

Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; and cons. of M.B.A. prog. dir.

BUAD 202. Accounting Foundations

2 sem. hrs.

Emphasis on external reporting to stockholders, government and other outside parties. Includes measurement of income and expenses and the valuation of assets and equities, under various forms of business organizations. Structuring data to aid management decisions. Offered every term. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; and cons. of M.B.A. prog. dir.*

BUAD 203. Mathematics Foundations

2 sem. hrs.

Traditional mathematics of algebra and calculus with an introduction to linear programming. Exponential and logarithmic functions are discussed with an introduction to the mathematics of finance. Revenue and profit maximization and cost minimization applications using calculus and linear programming. Offered every term. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM or HURE program; and cons. of M.B.A. prog. dir.*

BUAD 204. Statistics Foundations

2 sem. hrs.

Classical statistics with application in business and economics, including statistical inference, simple and multiple correlation/regression and analysis of variance. Offered every term. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM or HURE program; and cons. of M.B.A. prog. dir.*

BUAD 205. Information Technology Foundations

2 sem. hrs.

Basic vocabulary principles include systems theory, data, information, hardware, software, database management systems, telecommunications, the systems development life cycle, and the hierarchy of information systems. Students become familiar with technical jargon and the relationship of technology components to each other. BUAD 205 is a prerequisite for BUAD 270. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM or HURE program; and cons. of M.B.A. prog. dir. Ability to use personal computer and its tools.*

BUAD 210. Managerial Economics

3 sem. hrs.

Incorporates the tools and logic of microeconomics together with quantitative and statistical methods. The principal focus is on understanding and predicting economic behavior of consumers, firms, and industries through product-line and industry modeling and model estimation. The use of current statistical software and computer technology is promoted throughout the course. May include a segment in applied microeconomics that addresses economic policy issues. Offered every term. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 201, 203, and 204; and cons. of M.B.A. prog. dir.*

BUAD 216. International Trade 3 sem. hrs.

Examines traditional and contemporary issues of international trade using the basic tools of microeconomics. Addresses the basis for trade, the effects of trade and impediments to trade in particular. Specific topics include various trade theories, arguments for and against protection, the instruments and effects of trade policies, economic integration, and foreign direct investment. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 210 or equiv.; and cons. of M.B.A. prog. dir.*

BUAD 217. International Currency Markets

3 sem. hrs.

An examination of various foreign currency markets, including spot, forward, and derivative instruments, understanding the economic, historical, institutional, and empirical aspects of these markets. Analysis of the relationship between currency markets, money markets and bond markets. Development and study of the fundamental models of balance of payments and exchange rate determination. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 210 or equiv.; and cons. of M.B.A. prog. dir.*

BUAD 218. Principles of Commercial Real Estate Development 3 sem. hrs.

Provides the student with an introductory knowledge of the real estate development process. 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 an increasingly sophisticated real estate development feasibility process is followed to assess the viability of a development at different states of the development process. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 210 or equiv.; and cons. of the M.B.A. prog. dir.*

BUAD 219. Seminar in Economics

1-3 sem. hrs.

An examination of current topics in economics. Topics vary. Offered occasionally. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 210 or equiv.; and cons. of M.B.A. prog. dir.*

BUAD 220. Operations and Supply Chain Management 3 sem. hrs.

Survey course in operations management. It examines the operations function in manufacturing and service firms from a managerial perspective. It covers both classical and contemporary concepts and techniques of planning, designing, and managing operations and processes. To enhance learning concepts, it explores real problems and opportunities faced by (operations) managers through case analysis and research of hands-on experience issues. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 203, 204 or equiv.; and cons. of M.B.A. prog. dir.*

BUAD 221. Manufacturing Management

3 sem. hrs.

Provides an overall understanding of the essential concepts, methods, and practices utilized in manufacturing management. Includes such topics as: manufacturing strategy, quality management, inventory management, production planning and scheduling, MRP, capacity planning, and Just-in-Time systems. Taught from a managerial perspective and includes a discussion of some of the leading edge techniques in this area like synchronous manufacturing, cellular manufacturing, supply chain management, and virtual manufacturing. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 220 or equiv.; and cons. of M.B.A. prog. dir.*

BUAD 222. Service Operations Management

3 sem. hrs.

Examines key concepts and techniques associated with designing, managing, and delivering services in various types of organizations. The main issues include service challenge, design, productivity, quality, demand and capacity management, workforce planning and scheduling, queue management, strategy, and integration. Leans heavily on the discussions of cases as well as hands-on experience assignments in various service industries. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 220 or equiv.; and cons. of M.B.A. prog. dir.*

BUAD 223. Quality and Process Management 3 sem. hrs.

Presents the quality system as a strategic management concept. As such, first, issues related to customer focus, value, and satisfaction; organizational change, learning, adaptability, effectiveness, and improvement; and policy planning and deployment, are addressed. Next, concepts and methods dealing with product and process design, quality function deployment, bench marking, and process improvement and reengineering are discussed. Finally, techniques for quality measurement and improvement such as statistical process control, reliability, process capability, and acceptance sampling are covered. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 220 or equiv.; and cons. of M.B.A. prog. dir.*

BUAD 224. Quantitative Decision Modeling and Analysis 3 sem. hrs.

Examines quantitative aspects of managerial decision making. Introduces models and meth-

ods that are widely used for the analysis of a variety of managerial problems. Topics may include: linear programming, transportation models, networks, project management, queuing and simulation. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 203, 204 or equiv.; and cons. of M.B.A. prog. dir.*

BUAD 229. Seminar in Operations and Supply Chain Management 1-3 sem. hrs.

An examination of current topics in operations management. Topics vary but may include: supply chain management, project management, global operations management, and operations strategy. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 220 or equiv.; and cons. of M.B.A. prog. dir.*

BUAD 230. Managerial Accounting

3 sem. hrs.

Emphasizes the role of the accounting system as a quantitative information system. Available data are restructured in the form of internal reports to management for use in planning and controlling routine operations as well as in making non-routine decisions and formulating major plans and policies. The analysis of data makes use of regression analysis, matrix algebra, and linear programming. Offered every term. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 202, 203, 204 or equiv.; and cons. of the M.B.A. prog. dir.*

BUAD 231. Legal Issues in Business and Technology 3 sem. hrs.

Provides an owner/manager's perspective of the significant influence of the law and of legal principles on managerial decision making. Major topics will include government regulation of business activities, contract law, liability law and forms of business organizations. Emphasis is on the application of these principles to managerial decision making in the current business environment. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 230; and cons. of M.B.A. prog. dir.*

BUAD 232. Technology and the Law in the 21st Century 3 sem. hrs.

Addresses the various aspects of how technology law currently affects business. Areas of review will include such topical issues as Internet transmissions and jurisdictional issues and problems regarding both place of litigation and the law to be applied to technology-based legal actions; matters surrounding encryption codes, privacy, Web site content and filtering issues, unauthorized use of personally provided data; the emerging and proliferating concept of Web-based libel suits; Internet crimes such as stalking, theft, terrorism; patent protection, copyright issues and trade secret law affecting technology based business; electronic funds transfer issues, debit card payment problems, e-commerce contracts, electronic signatures, etc. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; and cons. of M.B.A. prog. dir.*

BUAD 239. Seminar in Accounting

1-3 sem. hrs.

Elective. Topics vary. Offered occasionally.

Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 230; and cons. of M.B.A. prog. dir.

BUAD 240. Marketing Management

3 sem. hrs.

An integrated approach to marketing from a managerial point of view. Making use of economic, quantitative, and behavior concepts in analyzing and developing a framework for the decision-making and implementation of the firm's marketing program. Offered every term. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; and cons. of M.B.A. prog. dir.

BUAD 241. Consumer Behavior 3 sem. hrs.

Examines the consumer's process of planning, purchasing and using economic goods and services. The course is interdisciplinary in nature and applies concepts from psychology, sociology, economics and anthropology. Additional topics include services and industrial buying behavior. Case analyses are used. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 240; and cons. of M.B.A. prog. dir.

BUAD 242. Global Marketing Strategy

3 sem. hrs.

Objectives: 1. To develop an understanding of international marketing concepts and show how these concepts can be applied to different international marketing environments and situations. 2. To examine the major environmental factors influencing the development of international marketing strategies. 3. To critically evaluate the developments in global economic, technological, political, and social environments. 4. To examine the different international marketing mix configurations in terms of their strategic orientations and market relevancy. 5. To evaluate the ethical dimensions of international marketing involvement. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 240; and cons. of M.B.A. prog. dir.

BUAD 243. Advanced Multivariate Data Analysis 3 sem. hrs.

Examines techniques of multivariate data analysis — methods that are often used to extract meaningful information from a data set. The course structure is based on the assumption that most users of multivariate data analysis techniques are applications-oriented managers who, from time to time, require these methods to help them in their professional work. This course is meant for such students, but not for those intending to become professional statisticians. However, knowledge of basic statistics and matrix algebra is necessary to appreciate the course content.

Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 203, 204 and 240; and cons. of M.B.A. prog. dir.

BUAD 244. Direct Marketing & e-Commerce

3 sem. hrs.

Examines the principles, strategies, and tactics of direct marketing (database marketing), how

direct marketing differs from general marketing, and how direct response advertising differs from general advertising. Addresses marketing aspects of e-commerce and successful e-commerce (online direct marketing, e.g. Amazon.com). Covers CRM, how customer segmentation can increase customer mail, e-mail efficiency and file profitability, customer profitability and customer lifetime value, break-even analysis, tracking and forecasting in direct marketing (offline and online), testing and research in direct marketing, and legal ethical issues related to direct marketing, especially privacy. Determine how to develop marketing action plans (course project). *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 240; cons. of M.B.A. prog. dir.; Internet access with a Web browser; and access to Microsoft Word/Office.

BUAD 245. Strategic Marketing 3 sem. hrs.

Provides students with the opportunity to discuss emerging issues in marketing as they influence marketing strategy. Contemporary writings in marketing strategy will be the focus of the seminar. Discussion will revolve around analyses of the various authors' observations and examination of the practical value to a working manager. Special emphasis on the relation of the external environment and its impact on marketing decisions. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 240; and cons. of M.B.A. prog. dir.

BUAD 246. Customer Relationship Management 3 sem. hrs.

Analyzes how companies can obtain a sustainable competitive advantage by managing their relationships with their customers more effectively. Teaches the main marketing variables that impact customers' satisfaction judgements. Emphasis on understanding the powerful relationship between customer loyalty and company profits. Discusses and evaluates the most effective methods for responding to dissatisfied customers' complaints. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 240; and cons. of M.B.A. prog. dir.

BUAD 247. Marketing and Public Policy 3 sem. hrs.

Reviews the changing regulatory, legal, social and ethical environment affecting marketing managers. Specific course topics include: marketing and advertising regulation and self-regulation, advertising deception and unfairness, marketing's impact on society, regulation of mergers and joint ventures, warnings and disclosures, and legal issues involved in product, pricing and distribution decisions. Special emphasis will be placed on consumer protection issues faced by federal agencies. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 240; and cons. of M.B.A. prog. dir.

BUAD 249. Seminar in Marketing

1-3 sem. hrs.

An intensive study and critical examination of marketing theories, concepts, and contemporary marketing problems. Course content changed each time offered and may include: marketing logistics, quantitative methods in marketing, international marketing, or marketing

and society. Offered occasionally. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 240; and cons. of M.B.A. prog. dir.

BUAD 250. Financial Management

3 sem. hrs.

Application of financial theory and advanced techniques to the managerial decisions of the business firm. Topical coverage includes the areas of risk, valuation, capital structure, mergers and acquisitions, investment decisions and international finance. Offered every term. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 202, 203, 204 or equiv.; and cons. of the M.B.A. prog. dir.

BUAD 251. Investments 3 sem. hrs.

The role and functioning of securities markets. Specific topics include the equity, fixed income, options and futures markets. Presents portfolio and capital market theory, the efficient markets hypothesis, institutional organization, and security valuation techniques. Offered occasionally. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 250; and cons. of M.B.A. prog. dir.

BUAD 252. Cases in Financial Policy

3 sem. hrs.

Application of financial principles and techniques to the operational aspects of the business firm through case problems. Estimating amount and timing of required funds, acquisition of short- and long-term funds, valuation of assets and enterprises. Offered occasionally. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 250; and cons. of M.B.A. prog. dir.

BUAD 253. Fixed Income Markets and Securities 3 sem. hrs.

Focuses on the use of fixed income securities to fulfill investment requirements or accommodate corporate financing strategies. Coverage includes fixed income markets and the securities traded in those markets, techniques used to value fixed income securities, and derivative strategies using fixed income securities. Offered occasionally. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 250; and cons. of M.B.A. prog. dir.

BUAD 254. Security Analysis and Asset Valuation 3 sem. hrs.

Focuses on the application of valuation principles to common stock and other assets. Topical coverage includes estimating risk-adjusted discount rates, developing free cash flows to the firm and free cash flow to equity models, and using relative valuation techniques. Valuing real estate, private or unique firms, and non-traditional investments is also covered. Offered occasionally. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 250; and cons. of M.B.A. prog. dir.

BUAD 255. Financial Derivatives 3 sem. hrs.

Study of the mechanics, pricing, arbitrage, and risk of derivative securities markets, including options, futures, swaps, and collateralized securities and the markets in which they are traded. Applications are developed of the use of these markets as a hedging vehicle for portfolio man-

agers, corporate treasurers, bankers, and others. Offered occasionally. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 250; and cons. of M.B.A. prog. dir.

BUAD 256. Bank Management 3 sem. hrs.
Management of a commercial bank, including lending, loan pricing, liability management, liquidity, and asset/liability management. Issues relating to the current bank regulatory environment, including bank failures and capital adequacy, are discussed. Offered occasionally. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 250; and cons. of M.B.A. prog. dir.

BUAD 257. Financial Markets 3 sem. hrs.
Concerned with capital markets and the institutions and services provided in that market. Students will become familiar with the various financial markets with an emphasis on the interrelationships; learn how the component capital/financial markets are interrelated as they offer financial services, and how prices are interrelated through valuation and arbitrage. This course will contain an analysis of the determination and structure of interest rates, a discussion of the Federal Reserve Bank and its role in financial markets, a review of monetary theory and policy, and an introduction to analysis of securities markets. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 250; and cons. of M.B.A. prog. dir.

BUAD 258. International Financial Management 3 sem. hrs.
Examines the unique financial problems in managing a multinational firm. Financial principles are applied to a variety of multinational business issues including: hedging currency and interest rate risk, multinational capital budgeting, direct foreign investment, and managing a global business firm. Integrates financial theory with a case study approach. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 250; and cons. of M.B.A. prog. dir.

BUAD 259. Seminar in Finance 1-3 sem. hrs.
Elective. Topics vary. Offered occasionally. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 250; and cons. of M.B.A. prog. dir.

BUAD 260. Ethical Issues, Regulatory Environment and Human Resource Management 3 sem. hrs.
Addresses an array of human resource topics from the manager's point of view. Three themes will be woven throughout this course: ethical issues presented by selected human resource policies and programs; the legal and regulatory environment pertaining to employees and to union organizations and representation; and establishing consistency between human resource management policies and programs and the strategic objectives of the organization. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; and cons. of M.B.A. prog. dir.

BUAD 261. New Venture Formation 3 sem. hrs.
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 the new initiative. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 250; and cons. of M.B.A. prog. dir.

BUAD 262. Organizational Behavior 3 sem. hrs.
Analysis of the intersection of the administrative process and the organization in attaining goals in various environments. Determinants of group and organizational performance, with consideration given to the intergroup processes, complex organizational processes, and the behavioral consequences of organizational structure. Offered every term. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; and cons. of M.B.A. prog. dir.

BUAD 263. Variable Topics in the Global Environment of Business 3 sem. hrs.
"Environmental influences" refers to a company interfacing with a variety of groups; that is, stakeholders, some internal to the company, such as stockholders and employees, and some external to the company, such as consumers, competitors, and government agencies. In a broader context, social environmentalism refers to the impact of a corporation's social, legal, regulatory, political, ethical and international environment upon a corporation's objectives. The specific objectives are to provide a general understanding of the major relationships between business firms and their stakeholders, to develop key concepts and principles that can be used by managers as they cope with the firm's various stakeholders, and to provide some practice in using these analytic tools by applying them to selected current problems and issues confronting business. Offered every term. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; and cons. of M.B.A. prog. dir.

BUAD 264. International Management 3 sem. hrs.
Directed toward practicing managers who wish to build cross-cultural competence and develop a deeper understanding of contemporary issues in international management (e.g., management of cross-border mergers, acquisitions and alliances; transfer of best practices across organizational and national boundaries). Grounded in theory, yet focuses on the implications of these issues for managers and their organizations. Class activities will comprise lectures, case analyses, videos, a cultural simulation exercise, and interactive activities and discussions. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 262; and cons. of M.B.A. prog. dir.

BUAD 266. Leadership, Motivation, and Organizational Change 3 sem. hrs.
Designed to: 1) examine and evaluate existing leadership theories, 2) survey topical issues and new developments in the leadership area, and 3) develop students' leadership skills and abilities. Motivation and leadership concepts will be used to analyze, diagnose, and make decisions about various organizational situations. Primary focus on case analysis. Lectures and discussions also will be used to provide perspective on assigned reading. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 262; and cons. of M.B.A. prog. dir.

BUAD 267. Understanding Entrepreneurship 3 sem. hrs.
An overview of current theory and research on entrepreneurial phenomena. Material from economics, organizational science, psychology, political science, sociology, and public policy will be used to explore conceptions of entrepreneurship, entrepreneurial career choices, new firm foundations, new firm survival and success, effects of social context on entrepreneurship, and the impact of public policy. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 262; and cons. of M.B.A. prog. dir.

BUAD 268. Topics in Human Resource Management 3 sem. hrs.
Elective. Topics vary. Offered occasionally. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 262; and cons. of M.B.A. prog. dir.

BUAD 269. Seminar in Organizational Management 1-3 sem. hrs.
Designed to enhance or broaden the student's understanding and perception of personal organizational behavior for role effectiveness. Concentrates on depth analysis of specific theories, topics, issues in organizational structure and human interaction. Offered occasionally. Topics vary. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 262; and cons. of M.B.A. prog. dir.

BUAD 270. Information Technology Strategy 3 sem. hrs.
Covers how information flows throughout an organization and how it impacts managerial decision-making. Emphasizes user involvement/leadership in information systems project management to prepare non-IT managers to be responsible for budgets of IT initiatives. Student managers can realize how to exploit and leverage information for decision making that re-engineers businesses. Methodologies include case studies and team projects. *Prereq:* Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 205; and cons. of M.B.A. prog. dir.

BUAD 272. Decision Support Systems

3 sem. hrs.

Provides the student with an appreciation of how the computer can be used in supporting the managerial decision-making function. Application and architectures for implementing such a system are discussed. Emphasis is placed on expert system's technology as a tool for implementing DSS. Students will be expected to utilize such software tools as databases, spreadsheets or modeling languages, and expert systems shells (instruction on expert systems shells will be provided). A term project will involve the implementation of an expert system prototype within a DSS context. Offered occasionally. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 205; and cons. of M.B.A. prog. dir.*

BUAD 273. Telecommunications

3 sem. hrs. Designed to provide non-information technology (IT) managers a brief overview of the essential elements of connectivity and the resources needed to deploy worldwide communication. Topics include: media, network configuration, efficient resource allocation, the communication carrier industry, videoconferencing, groupware, and applications in supply chain management and e-business. Students will use team case analyses, expert speakers, field trips, and project reports to explore telecommunications. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 205; and cons. of M.B.A. prog. dir.*

BUAD 274. Database Management

3 sem. hrs.

Examines how corporate data can be organized and managed within a computerized data base environment. Topics include: the process of planning, designing, and implementing an organization's data bases; perspective of the user accessing data and the data base manager are addressed. The course grade is based primarily on a midterm, a final exam and a term project. Some case materials may be used in class and "hands-on" computer work using the SQL data base query required. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 205; and cons. of M.B.A. prog. dir.*

BUAD 279. Seminar in Information Technology

1-3 sem. hrs.

Elective. Topics will vary. Offered occasionally. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; BUAD 205; and cons. of M.B.A. prog. dir.*

BUAD 280. International Study in Business

0-3 sem. hrs.

Structured travel and study programs in international business. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, HURE or NURS program; and cons. of M.B.A. prog. dir.*

BUAD 289. Seminar in International Business

1-3 sem. hrs.

Elective course, topics will vary. Offered occasionally. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM, or HURE program; and cons. of M.B.A. prog. dir.*

BUAD 290. Topics in Strategic Management in a Global Economy

3 sem. hrs.

Study of comprehensive business cases involving problematic situations of top management significance and requiring the application of mature and resourceful diagnostic, problem-formulating, and problem-solving competence. Offered every term. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM or HURE program; 21 core hours of graduate credit; and cons. of M.B.A. prog. dir.*

BUAD 291. Business Skills

1 sem. hr. Variable topics. Suggested topics: effective communications-writing, speaking and presentations; conflict management; team building; crisis management; effective use of software in business (e.g., statistical software, such as SAS, SPSS, and GIS software, such as ArcView, etc.); topical areas in decision making, market research, etc. *Prereq: Admitted to the graduate ACCO, BUAD, ECON, ENMA, HCTM or HURE program; and cons. of M.B.A. prog. dir.*

BUAD 295. Independent Study

1-3 sem. hrs. Offered every term. *Prereq: Admitted to the graduate BUAD program and cons. of dept. ch.; or the graduate ACCO program; or the graduate ECON program; or the graduate HURE program; or the graduate ENMA program; and cons. of M.B.A. prog. dir.*

BUAD 891. Continuous Enrollment — Less than Half-Time

0 sem. hrs.

Fee. S/U grade assessment. *Prereq: Admitted to BUAD program; or ECON program; or HURE program; or ENMA program; or ACCO program; and cons. of dept. ch.*

BUAD 892. Continuous Enrollment — Half-Time

0 sem. hrs.

Fee. S/U grade assessment. *Prereq: Admitted to ACCO, BUAD, ECON, ENMA or HURE program; and cons. of dept. ch.*

BUAD 893. Continuous Enrollment — Full-Time

0 sem. hrs.

Fee. S/U grade assessment. *Prereq: Admitted to ACCO, BUAD, ECON, ENMA or HURE program; and cons. of dept. ch.*

ECONOMICS (ECON)

Chairperson and Associate Professor: D. Clark
Professor: Brush, Chowdhury, Davis, Nourzad, Smiley (Emeritus)

Associate Professor: Breeden, Crane, Daniels, McGibany, Toumanoff

Assistant Professor: Wang, Yakusheva

Adjunct Assistant Professor: Lephardt

Visiting Assistant Professor: Kohls

Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREE OFFERED

Master of Science in Applied Economics, Plan B only

SATISFACTORY PERFORMANCE

All students are expected to maintain satisfactory performance in their progress toward their degree. Accordingly, the graduate program director reviews all student grades at the end of each academic session, a review that covers completed work as well as progress toward the master's essay requirement. Students are

expected to maintain a grade point average of 3.00 or above for satisfactory performance in as well as graduation from the M.S.A.E. program. When a student falls below this level of performance, appropriate recommendations are made to the vice provost for research and dean of the Graduate School. In addition to academic performance, students are expected to display the highest levels of personal and professional integrity while they are a part of the M.S.A.E. program. Serious breaches of integrity may subject the student to disciplinary action, including expulsion from the university.

SPECIALIZATIONS

Business Economics, Financial Economics, International Economics, Real Estate Economics

A general track, requiring no specialization, is also available.

PROGRAM DESCRIPTION

The master of science program in applied economics is designed for individuals seeking careers as economic or financial analysts in industry, government, or the financial sector. The program provides students with the solid grounding in economic theory and the working knowledge of advanced quantitative methods needed to succeed as business economists, financial analysts, economic researchers, government staff economists, or economic consultants. The program concentrates on developing and applying practical skills which can be used to solve real problems confronting business and government. The curriculum is designed to produce practitioners who can develop and interpret economic models. Courses emphasize the application of economic theory and the use of quantitative techniques rather than the derivation of their theoretical underpinnings. Communication skills are stressed through frequent written and oral presentations of results from applied projects.

PREREQUISITES FOR ADMISSION

Applicants are expected to have a four-year baccalaureate degree with at least one course in each of the following areas: intermediate microeconomic theory, intermediate macroeconomic theory, statistical methods, and calculus. At least minimal familiarity with computer programming is also required.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation from former professors.
4. GRE scores or GMAT scores.
5. (*For international applicants only*) a TOEFL score or other acceptable proof of English proficiency.

BACHELOR'S-MASTER'S PROGRAM

This five-year program allows students to earn both their master of science in applied economics (M.S.A.E.) and an undergraduate degree from the College of Arts and Sciences

or the College of Business. Undergraduate students begin their graduate work in their senior year by taking two graduate level courses and starting their graduate essay project.

These graduate courses double-count toward the undergraduate and graduate degrees. Should a student be denied admission to the M.S.A.E. program, the courses will be counted toward the undergraduate degree. Upon completion of the first term as a master's candidate, the student must petition the Graduate School to transfer the courses taken as an undergraduate to the master's degree.

To be considered for admission to the five-year program, applicants must formally apply to the Graduate School during their senior year at Marquette University, complete all of the application requirements as listed above, and indicate on their application that they are applying for the five-year program. For detailed information, contact the Economics Department by telephone (414) 288-7377 or fax (414) 288-5757.

MASTER'S REQUIREMENTS

The program requires a minimum of 30 credit hours of course work (at least 15 of which must be in 200-level graduate courses), a non-credit master's essay, and an oral comprehensive examination.

For students completing a specialization, course work will include: 12 credit hours of required core courses in economic theory and quantitative analysis, 12 credit hours of course work relating to a chosen area of specialization, and six credit hours of electives. General track students must complete the 12 credit hours of required core courses, 12 credit hours of economics electives, and six additional credit hours in economics, business or the social sciences. With the approval of the program director and appropriate extra work of graduate caliber, a student may apply toward the degree up to six credit hours of selected 100-level upper division courses. Also, with the approval of the program director, a student may substitute, for the usual elective requirements, up to six credit hours of course work in fields outside of economics and business administration.

The master's essay consists of a careful application of the student's newly acquired analytical skills to a particular issue or problem. The essay is completed during the final term of the program and is often an extension of a previously completed course project.

An oral comprehensive examination will be administered in the student's last term of the program. This examination will cover subject matter prescribed by the Department of Economics.

PROGRAM DETAILS

Each student must choose one of the four areas of specialization: business economics, financial economics, international economics, real estate economics, or the student must complete the general track. All specializations and the general track require a common set of core courses: two courses in quantitative analysis (ECON 201 and 202) and two courses in microeconomic and macroeconomic theory (ECON 210 and 220). ECON 201 is strongly recommended to be taken in the first term of course work.

Business economics requires the core course work plus: six to nine credit hours of additional course work in economics; Managerial Accounting (BUAD 230); and six to nine credit hours selected from Operations and Supply Chain Management (BUAD 220), Manufacturing Management (BUAD 221), Service Operations Management (BUAD 222), Quantitative Decision Modeling and Analysis (BUAD 224), Legal Issues in Business and Technology (BUAD 231), Marketing Management (BUAD 240), Advanced Multivariate Data Analysis (BUAD 243), Financial Management (BUAD 250), and Organizational Behavior (BUAD 262).

Financial economics requires the core course work plus: Monetary Theory and Policy (ECON 240), Managerial Accounting (BUAD 230), Financial Management (BUAD 250), Seminar in Finance (BUAD 259), and six credit hours of electives in economics.

International economics requires the core course work plus: Monetary Theory and Policy (ECON 240), International Trade (ECON 256), International Currency Markets (ECON 257); six credit hours selected from Global Marketing Strategy (BUAD 242), International Management (BUAD 264), International Political Economy (POSC 208), and Comparative Economic Development (ECON 155); and three additional credit hours in economics. For international economics, there is an additional requirement of a minimum of 12 credit hours of foreign languages at the undergraduate level or the equivalent.

Real estate economics requires the core course work plus: Studies in Urban and Regional Economics (ECON 246), Financial Management (BUAD 250), Seminar in Finance: Real Estate Finance and Investments (BUAD 259), Principles of Commercial Real Estate Development (BUAD 218), 3 credit hours of Business Skills (BUAD 291) ideally in SAS, SPSS and GIS or equivalent, and 3 graduate level elective hours in economics, preferably Economics of the Public Sector (ECON 245).

General economics track requires the core course work plus: 12 credits in economics and 6 elective hours in economics, business administration, or social sciences.

Note: Business Administration (BUAD) courses may require appropriate prerequisites.

COURSE DESCRIPTIONS

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

Economics (ECON)

ECON 126. American Economic History
3 sem. hrs.

ECON 155. Comparative Economic Development 3 sem. hrs.

ECON 163. Environmental and Natural Resource Economics 3 sem. hrs.

ECON 181. Economics and Ethics
3 sem. hrs.

ECON 182. Economics and Law
3 sem. hrs.

GRADUATE COURSES:

Business Administration (BUAD)

Specific descriptions of BUAD courses are provided in the Business Administration section of this bulletin.

Economics (ECON)

ECON 201. Applied Econometrics 3 sem. hrs.

Specification, estimation, and statistical verification of multiple linear regression models, and hypothesis testing. Causes, consequences, detection of such problems as heteroscedasticity, autocorrelation, and ARCH. Other topics include estimation of models with panel data and limited dependent variables. Offered fall term.

ECON 202. Applied Time-Series Econometrics and Forecasting
3 sem. hrs.

Continuation of ECON 201 focusing on more advanced econometric and forecasting techniques using primarily time-series models such as ARIMA and transfer functions, VAR, and VEC as well as the method of combining forecasts. Emphasis on the practical knowledge of above techniques, and on reporting and presenting econometric results. Offered spring term. *Prereq:* ECON 201 or equiv.

ECON 210. Microeconomic Theory and Applications 3 sem. hrs.

Surveys mathematical techniques applied to economics, including differential calculus and linear algebra. Develops neoclassical theory of firm and consumer behavior using mathematical techniques. Emphasizes the methodology of constructing and using microeconomic models. Explains economic behavior at the individual, firm, market, and general equilibrium levels. Offered fall term.

ECON 220. Macroeconomic Fluctuations: Theory and Applications 3 sem. hrs.

Covers both long-run growth and short-run fluctuations. Begins with an analysis of the economy's long-run growth path using neoclassical and endogenous growth models, then surveys theories of the business cycle orthodoxy by orthodoxy in historical order. Static and dynamic models of the economy are developed and used for policy analysis. Offered spring term.

ECON 231. Industrial Organization and Public Policy 3 sem. hrs.

Empirical studies in patterns of market structure, business behavior and performance. Industrial concentration, entry barriers, pricing and promotional behavior, efficiency and profitability. Applications in the field of antitrust and regulation. Offered occasionally.

ECON 240. Monetary Theory and Policy
3 sem. hrs.

Factors affecting money supply, money demand, and money's influences on the macroeconomy. Federal Reserve policy and its implication for money supply. International monetary economics and coordination of monetary policy among different countries. Monetary policy under different exchange rate regimes. Examination of contemporary theoretical and econometric monetary issues and policy prescriptions. Offered occasionally.

ECON 245. Economics of the Public Sector
3 sem. hrs.

Economic analysis of the public sector, including the topics of taxation and expenditure policy, federalism/centralism, economics of law, Pareto criteria, and constitutional economics. The course will culminate in the presentation of a research paper on a suitable topic in public economics. Offered occasionally.

ECON 246. Studies in Urban and Regional Economics 3 sem. hrs.

Uses economic tools to examine decisions of firms and households in a spatial setting. Covers regional economic issues, such as why cities exist and where they tend to develop, inter-urban household migration and firm location decisions, and models of urban growth. The urban economic topics explored include the inter-urban location decisions of economic agents in the context of amenities, public goods and zoning restrictions. Finally, the tools developed in the class are used to investigate urban problems such as poverty, housing, and transportation issues. Offered occasionally.

ECON 256. International Trade 3 sem. hrs.
Examines traditional and contemporary issues of international trade using the basic tools of microeconomics. Addresses the basis for trade, the effects of trade, and impediments to trade in particular. Specific topics include various trade theories, arguments for and against protection, the instruments and effects of trade policies, economic integration, and foreign direct investment. Offered occasionally.

ECON 257. International Currency Markets
3 sem. hrs.

An examination of various foreign currency markets, including spot, forward and derivative instruments, understanding the economic, historical, institutional, and empirical aspects of these markets. Analysis of the relationship between currency markets, money markets and bond markets. Development and study of the fundamental models of balance of payments and exchange rate determination. Offered occasionally. *Prereq: Cons. of M.S.A.E. dir.*

ECON 260. Studies in Labor Market Analysis
3 sem. hrs.

Determinants of the demand and supply of the services of human beings. Compensatory wage differentials, human capital investment, migration and immigration, and labor market discrimination. The role of unions, government in the labor market and current issues. Offered occasionally.

ECON 270. Practicum in Applied Economics
1-3 sem. hrs.

Directed work in applied economic analysis under the supervision of a working professional

in a business, financial, international or public policy area. Requires a faculty supervisor. Offered annually. *Prereq: Cons. of M.S.A.E. dir.*

ECON 295. Independent Study 1-3 sem. hrs.
Offered every term. *Prereq: Cons. of dept. ch.; cons. of M.S.A.E. dir.*

ECON 296. Seminar in Economics
1-3 sem. hrs.

Specific titles to be announced in *Schedule of Classes*. *Prereq: Cons. of dept. ch.; cons. of M.S.A.E. dir.*

ECON 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.

Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

ECON 892. Continuous Enrollment — Half-Time 0 sem. hrs.

Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

ECON 893. Continuous Enrollment — Full-Time 0 sem. hrs.

Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

EXECUTIVE MASTER OF BUSINESS ADMINISTRATION (EXBU)

DEGREE OFFERED

Master of Business Administration, Plan B only

SPECIALIZATIONS

A specialization in International Business is earned by all students in the Executive M.B.A. program who successfully complete all International Business courses with the grade of B or above. These courses are part of the E.M.B.A. curriculum. Additional courses are not required.

Students wishing to pursue a second specialization in e-Business, Economics, Finance, Human Resources, Management Information Systems, Marketing, or Total Quality Management must complete a separate set of 12 credits specific to that specialization requirement. For a list of approved specializations and the requisite course work, contact the M.B.A. program director, or visit our Web site at www.marquette.edu/business. Credits cannot double-count for more than one specialization. The students must earn a grade of B or above in each of the prescribed electives, and all electives must be taken at Marquette University. Specializations are noted on the students' official university transcript.

Graduates of the Executive M.B.A. program may pursue a specialization within five years of graduation. To obtain additional information regarding this opportunity, contact the M.B.A. office at (414) 288-7145 or e-mail MBA@marquette.edu.

PROGRAM DESCRIPTION

The Marquette Executive M.B.A. program is designed for participants whose increasing career responsibilities require the development of broad business knowledge and skills. This is

accomplished during a relatively short schedule while allowing participants to fulfill the demands of their current job. The Executive M.B.A. is designed so that students finish their degree in less than 18 months. After a five-day introductory session, the program meets all day on Fridays and Saturdays of every other week.

Marquette's program is both global and technological. The global focus includes courses on global finance and economics and international management and marketing, culminating with an international trip to examine the similarities and differences of international companies. The tuition includes a laptop computer.

PREREQUISITES FOR ADMISSION

Applicants are expected to have a four-year bachelor's degree in any field and at least five years of managerial or professional experience.

APPLICATION DEADLINE

Applications are accepted throughout the year and reviewed as they are received. Applicants will be accepted as they qualify until the class has been filled. Classes start each August.

APPLICATION REQUIREMENTS

The Executive M.B.A. program has prepared an admissions packet for applicants. Copies may be obtained by contacting the Executive M.B.A. office by phone at (414) 288-7145, by fax at (414) 288-1660, by mail at Executive M.B.A. Program, Straz Hall, Marquette University, P.O. Box 1881, Milwaukee, WI 53201-1881, or by e-mail at MBA@marquette.edu. Also visit our Web site at www.marquette.edu/business.

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Specific information including a recent resume, career goals, professional/community activities, honors and other special circumstances.
3. Official transcripts from all current and previous colleges/universities except Marquette.
4. Two letters of recommendation (using the form in the application packet).
5. Official test scores from the Graduate Management Admission Test (GMAT).
6. Additional information, which may be requested on an individual basis.

A personal interview is required of all applicants. It will be scheduled after college transcripts and letters of recommendation have been received.

GENERAL INFORMATION

Executive M.B.A. tuition for the class starting in fall 2006 is \$42,500.00 for the entire 17 month program. Fee includes the \$1,000 deposit, all tuition credits, all textbooks and materials, a laptop computer which the student retains at the end of the program, computer software, most meals, a European trip, including travel to and from destination plus lodging, and all other applicable fees. For more detailed information, contact the Executive M.B.A. office by phone at (414) 288-7145, by fax at (414) 288-1660, by mail at Executive M.B.A. Program, Straz Hall, Marquette University, P.O. Box 1881,

Milwaukee, WI 53201-1881, or by e-mail at MBA@marquette.edu.

MASTER'S REQUIREMENTS

The curriculum ensures that participants will have the theoretical and practical knowledge as well as the skills necessary to be a leader. The integration of knowledge and skills culminates in the International Business Research Project course. (The schedule is subject to revision.)

FALL TERM, YEAR 1

EXBU 210 Economic Issues of Today

EXBU 224 Quantitative Tools for Decision Making

EXBU 230 Accounting for Managerial Decisions

EXBU 240 Marketing Management

EXBU 260 Teams and Performance *

SPRING TERM, YEAR 1

EXBU 209 Information Technology

EXBU 243 Global Marketing and Management

EXBU 250 Corporate Finance

EXBU 262 Managing People in Organizations

EXBU 284 International Business Research Methods *

SUMMER, YEAR 1

EXBU 263 Legal and Political Environment of Business

EXBU 280 International Study in Business (includes international trip)

EXBU 281 International Business Consulting Project (course extends through fall)

EXBU 288 Selected Business Topics

FALL TERM, YEAR 2

EXBU 253 Global Issues in Finance and Economics

EXBU 264 Ethical and Societal Issues in Business

EXBU 270 Service and Manufacturing Operations

EXBU 290 Strategic Management

* Courses are 1/2 term

COURSE DESCRIPTIONS

GRADUATE COURSES:

EXBU 209. Information Technology

3 sem. hrs.

Examines various emerging information technologies, possibly including data communications and networking, object-oriented design, expert systems, and group computing software. Emphasis is placed on understanding how to assess the potential application of these technologies to business problems, and on the process of assimilating these technologies within the organizations. *Prereq: Admitted to Executive M.B.A. program.*

EXBU 210. Economic Issues of Today

3 sem. hrs.

Integrates economic theory with quantitative and statistical methods for decision making and forward planning by management. The principal focus is on understanding and predicting the economic behavior of consumers, firms, and industries through product-line and industry modeling. *Prereq: Admitted to Executive M.B.A. program.*

EXBU 224. Quantitative Tools for Decision Making

3 sem. hrs.

Provides the business manager with effective quantitative methods and tools for managerial decision making and problem solving. The use of statistical and mathematical concepts and techniques for formulating and analyzing business problems will be emphasized. Instead of concentrating on detailed theoretical material, this course seeks to increase the executive's conceptual appreciation for statistical and quantitative techniques.

Prereq: Admitted to Executive M.B.A. program.

EXBU 230. Accounting for Managerial Decisions

4 sem. hrs.

Emphasizes the role of accounting as a financial information system for managerial decision. Since course participants will have had differing exposure to financial accounting, the basic financial accounting concepts and procedures will be covered first. Then, specific managerial accounting techniques and concepts will follow. Short cases, term projects and a computerized operational planning exercise will be used to learn the value of budgeting as a planning tool. Each of the major assignments will require written and oral reports. *Prereq: Admitted to Executive M.B.A. program.*

EXBU 240. Marketing Management

3 sem. hrs.

An integrated study of the analysis, planning, implementation, and control of marketing programs from a managerial point of view. Topics include: application areas of strategic marketing, customer analysis, market segmentation and competitive positioning, product development, brand management, pricing strategy, marketing channels, marketing communications, social and ethical issues in marketing, among others. Highlighting the course are case studies applied in the above topical areas.

Prereq: Admitted to Executive M.B.A. program.

EXBU 243. Global Marketing and Management

3 sem. hrs.

Discussion of: 1) leveraging core competencies in intercountry market selection and production positioning; 2) formulating and implementing global marketing strategies; 3) achieving strategic and competitive advantage in managing value chain activities globally; 4) developing an organizational infrastructure to manage cross-cultural differences and achieve operational synergy; and 5) promote a unified global marketing and management vision.

Prereq: Admitted to Executive M.B.A. program.

EXBU 250. Corporate Finance

3 sem. hrs.

Focuses on the application of financial theory on managerial decision. Topics include: the areas of risk, valuation, capital structure, mergers and acquisitions, and investment decisions. These issues are addressed through case studies of successful and unsuccessful financial strategies. *Prereq: Admitted to Executive M.B.A. program.*

EXBU 253. Global Issues in Finance and Economics

3 sem. hrs.

Surveys modern approaches to balance of payments and exchange rate determination, and examines various foreign currency markets including spot, forward, and derivative markets. Covers foreign exchange risk, pricing and arbitrage.

Applications include exposure and hedging in these markets for corporate and portfolio managers. Also includes an in-depth analysis of international trade including the pros and cons of free trade and the effects of tariffs and quotas. Recent trade policy such as NAFTA, the WTO, and the EU are also considered.

Prereq: Admitted to Executive M.B.A. program.

EXBU 260. Teams and Performance

1.5 sem. hrs.

Concentrates on the issues of forming effective teams, group processes, and group development. Participants will be evaluated in terms of the overall team performance, as well as through peer evaluations by team members. Topics include: team building activities, developing group visions, group versus individual decision making, and strategies for improving team performance. S/U grade assessment.

Prereq: Admitted to Executive M.B.A. program.

EXBU 262. Managing People in Organizations

3 sem. hrs.

Investigates the impact of human behavior on organizations and investigates how managers can predict and influence such behavior. Begins by focusing on the individual, then the group, and finally the organization as a whole. Topics include: interpersonal perception, motivation, conflict, leadership, corporate culture and organizational change. *Prereq: Admitted to Executive M.B.A. program.*

EXBU 263. Legal and Political Environment of Business

3 sem. hrs.

Examines the legal and regulatory environment in which business operates. Topics may include: the impact of public policy related to environmental issues, taxation, government spending, industry regulations and deregulation, and antitrust laws. *Prereq: Admitted to Executive M.B.A. program.*

EXBU 264. Ethical and Societal Issues in Business

1.5 sem. hrs.

Examines the impact of business on society, and the impact of ethical and societal issues on business. Objectives include: improving the student's ability to recognize and identify ethical issues, placing ethical issues in an organizational context, and improving the student's ability to reason toward a satisfactory resolution. *Prereq: Admitted to Executive M.B.A. program.*

EXBU 270. Service and Manufacturing Operations

3 sem. hrs.

Examines issues critical to service and manufacturing operations. Topics include: just-in-time systems, total quality management, sourcing and logistics, technology transfer, and risk management. Emphasis will be given to globalization of operations. *Prereq: Admitted to Executive M.B.A. program.*

EXBU 280. International Study in Business

3 sem. hrs.

Consists primarily of a structured 7-day trip to compare and contrast international business practices with those of the United States. Preparation includes readings and case discussions of international firms, including those scheduled to be visited. After the trip, a written analysis of the differences and similarities of European and American companies is required. *Prereq: Admitted to Executive M.B.A. program.*

EXBU 281. International Business**Consulting Project 3 sem. hrs.**

In teams, participants will identify a significant problem for an organization. The team will diagnose the problem, identify several potential solutions, choose one or more of those ideas, develop a complete and detailed action plan, and present that plan to the management of the company in need. *Prereq: Admitted to Executive M.B.A. program.*

EXBU 284. International Business Research**Methods 1.5 sem. hrs.**

Acquaints the students with the appropriate tools to use in conducting international business research. Various sources for research, including library data, Internet sources and similar resources will be presented. Provides the foundation for the International Business Consulting Projects. *Prereq: Cons. of dept. ch.; cons. of assistant dean.*

EXBU 288. Selected Business Topics**1-3 sem. hrs.**

A variety of potential topics will be presented to the class which will then make the final choice. Potential topics may include (but are not limited to): database marketing, human resources for the general manager, competitive marketing strategy, managing diversity, international policy, total quality management, flexibility in operations, taxes and strategic decision-making, and others. *Prereq: Admitted to Executive M.B.A. program.*

EXBU 290. Strategic Management**3 sem. hrs.**

Examines the diagnostic, problem-formulating, and problem-solving strategies of top managers. The course serves as an integration of earlier courses, and also presents current ideas concerning appropriate strategies for firms of varying sizes in diverse environments. *Prereq: Admitted to Executive M.B.A. program.*

ENGINEERING MANAGEMENT (ENMA)

DEGREE OFFERED

Master of Science in Engineering Management, Plan B only

PROGRAM DESCRIPTION

Engineering management is an interdisciplinary program designed to meet the educational needs of present and future managers in engineering fields who seek state-of-the-art education consistent with a technologically diverse and rapidly changing work environment. By its very nature, this program requires a partnership between the fields of engineering and management. Marquette's engineering management program is truly interdisciplinary since it is developed, sponsored, organized, and administered by a coalition of members from the Colleges of Business Administration and Engineering. Both colleges have graduate programs that are long-standing and highly regarded. The engineering management program capitalizes on these strengths by drawing on established and successful courses from each college. In addition, the program provides opportunities to integrate the disciplines of business and engineering.

These opportunities are provided both within the curriculum and through extra-curricular activities. Graduates of the program will be equipped with advanced technical and administrative skills that are required in the current business and engineering environments.

PREREQUISITES FOR ADMISSION

Admission decisions are based on a variety of criteria, each of which is intended to measure the applicant's ability to succeed in the program. No application can be evaluated until all of the required official documents have been received.

An applicant must have completed or be in the process of completing a four-year bachelor's degree (usually in engineering) from an accredited college or university. Qualified students may apply to this program after receiving their bachelor's degree in any one of the engineering disciplines, e.g., biomedical, civil, electrical, mechanical, etc. Applicants with an undergraduate engineering minor also may be eligible for admission. Students holding a bachelor's degree in disciplines other than engineering may be admitted to the program but may be required to take additional courses.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Essay questions on the application form.
3. Official transcripts from all current and previous colleges/universities except Marquette.
4. At least two letters of recommendation.
5. Official test scores from the Graduate Records Examination (GRE) or the Graduate Management Admission Test (GMAT).
6. Resume or job profile.
7. *(For international applicants only)* a TOEFL score or other acceptable proof of English proficiency.

MASTER'S REQUIREMENTS

All students must complete a minimum of 33 credit hours of course work (11 courses), of which nine courses (27 credit hours) are considered core courses and 2 courses (6 credit hours) are electives. A minimum of six courses (18 credit hours) must be taken from the College of Engineering and three courses (9 credit hours) must be taken from the College of Business Administration.

Students who do not have an adequate undergraduate background in business may also be required to complete one or more M.B.A. foundation courses (BUAD 201–205) in preparation for the core business courses.

CORE COURSES

Nine core courses must be selected from a restricted set of classes in each of the following three areas: business administration, engineering management and decision support. The list of approved core courses may change from time to time to maintain a state-of-the-art program. Currently, the core courses that are approved in each of the three required areas are as follows:

Business Courses (select three)

BUAD 210 Managerial Economics

BUAD 220 Operations and Supply Chain Management

BUAD 230 Managerial Accounting

BUAD 240 Marketing Management

BUAD 250 Financial Management

BUAD 262 Organizational Behavior

Engineering Courses (18 credits)

MEEN 148 Design of Engineering Experiments

and three of the following:

ENMA 281 Product and Process Development

– Project(s) Management

ENMA 282 Reliability and Design Failure Analysis

ENMA 283 Innovation and Technology

ENMA 284 Total Quality Engineering

ENMA 285 Value Engineering – Measurement, Design, and Management

ENMA 290 Management Issues in Engineering and Technology

ENMA 295 Independent Study

Decision Support Courses (select two)

MEEN 172 Optimization of Industrial Systems

MEEN 173 Industrial Simulation

BUAD 224 Quantitative Decision Modeling and Analysis

BUAD 249 Seminar in Marketing: Marketing Research

ECON 201 Applied Econometrics

ELECTIVE COURSES

Students may choose any two (200-level) elective courses that meet their individual needs. These courses can be selected from Business Administration, Biomedical Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, and Mechanical Engineering. Students who wish to select courses from other departments must obtain approval from the Graduate Committee.

HUMAN RESOURCES (HURE)

DEGREE OFFERED

Master of Science in Human Resources, Plan B only

PROGRAM DESCRIPTION

The master of science in human resources (M.S.H.R.) program is designed to meet the educational needs of individuals who are pursuing or intend to pursue a career in human resources. Students from any undergraduate field may be accepted into the program. Central to the program's objective is the development of skills and knowledge in the areas of greatest concern to a human resources professional. These critical areas include: compensation and reward systems, employment and labor law, labor relations, training and development, staffing, benefit administration, human resources information systems, and issues of diversity.

PREREQUISITES FOR ADMISSION

Admission to the M.S.H.R. program requires: a) a four-year bachelor's degree from an accredited college or university; b) an acceptable record of academic achievement at the bachelor's level and in any previous gradu-

ate course work; c) acceptable scores on required admission tests; and d) an overall composite profile of admission data (including an evaluation of previous work experience) that predicts success in the program.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Essay questions on the application form.
3. Official transcripts from all current and previous colleges/universities except Marquette.
4. Official test scores from the Graduate Management Admission Test (GMAT) or the Graduate Records Exam (GRE).
5. Resume or job profile.
6. *(For international applicants only)* three letters of recommendation and an official TOEFL score or other acceptable proof of English proficiency.

Note: Temporary non-degree applicants (admission valid for one term only) must submit all of the above except the GMAT or GRE scores. Students are encouraged to complete all application materials and apply for degree status. Temporary status is valid for one semester only. Temporary non-degree status students are not eligible to continue taking M.S.H.R. classes beyond one semester without degree admission. Typically, non-degree admission is not recommended in the human resources program.

BACHELOR'S-MASTER'S PROGRAM

This five-year program allows students to earn both their master of science in human resources and an undergraduate degree with a major or a minor in human resources. Students begin their graduate work the summer immediately following their senior undergraduate year by taking two graduate level courses. The remaining eight courses are completed in the student's fifth year.

Students may take two HURE courses (six credits) in their senior undergraduate year. These graduate courses double-count toward the undergraduate and graduate degrees. Should a student be denied admission to the M.S.H.R. program, the courses will be counted toward the undergraduate degree. Upon completion of the first term as a master's candidate, the student must petition the Graduate School to transfer the courses taken as an undergraduate to the master's degree.

To be considered for admission, applicants must formally apply to the Graduate School during their senior year at Marquette University, complete all of the application requirements as listed above, and indicate on their application that they are applying for the five-year program. For information, contact the director of the M.S.H.R. program by telephone (414) 288-3643, by fax (414) 288-5754, or by e-mail at tim.keaveny@marquette.edu.

MASTER'S REQUIREMENTS

The M.S.H.R. program requires a minimum of 36 credit hours of course work. The required number of credits can be as many as 38 if a student has not completed a microeconomics course during undergraduate studies.

FOUNDATION COURSE WORK

Students who have not completed a microeconomics course are required to complete BUAD 201 Economics Foundations (2 sem. hrs.). This course is in addition to the required 36 hours for the M.S.H.R. degree.

CORE COURSE WORK

Students must complete each of the following courses for 6 credit hours:

- HURE 212 Human Resource Statistics and Research Design
- HURE 251 Human Resources Strategy and Planning

HUMAN RESOURCES CORE

Students must complete 3 or 4 of the following courses for 9 or 12 credit hours:

- HURE 210 Staffing Work Organizations
- HURE 220 Training and Development
- HURE 230 Employee Compensation
- HURE 240 Labor Relations

Staffing, training, compensation and labor relations are the central functions performed by human resource professionals. Our students are required to take at least one course in three of the four areas. If a student elects to take all four of the above courses, the supporting field course work is reduced from 9 credit hours to 6 credit hours.

ETHICS CORE

(Select one)

- BUAD 263 Variable Topics in the Global Environment of Business
- HURE 211 Employment Law
- HURE 221 Diversity in Organizations

ELECTIVE CORE

(Select three)

- HURE 211 Employment Law
- HURE 221 Diversity in Organizations
- HURE 231 Employee Benefit Systems
- HURE 241 Negotiations
- HURE 250 Human Resources Information Systems
- HURE 259 Seminar in Human Resources
- BUAD 260 Ethical Issues, Regulatory Environment and Human Resource Management
- BUAD 262 Organizational Behavior
- BUAD 264 International Management
- BUAD 266 Leadership, Motivation, and Organizational Change
- PSYC 204 Industrial Psychology and Organizational Development
- PSYC 205 Personnel Selection

SUPPORTING FIELD COURSE WORK

In addition to foundation and core course work, students in the M.S.H.R. program must take six or nine credits (two or three courses) selected from a wide variety of supporting areas both within and outside of the College of Business Administration. Supporting areas of study include: communication, counseling, instructional leadership, economics, law, research methodology, and business administration. Students may choose any combination of courses in these areas from the list of designated classes (available from the Graduate Programs Office in the College of Business Administration).

COURSE DESCRIPTIONS

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

Under limited circumstances, and with prior approval, the following upper division courses may be taken for graduate credit only by students enrolled in the M.S.H.R. program.

Management (MANA)

MANA 163. Compensation of Human Resources 3 sem. hrs.

MANA 164. Labor Relations and Collective Bargaining 3 sem. hrs.

MANA 166. Employment of Human Resources 3 sem. hrs.

MANA 167. Training and Development 3 sem. hrs.

GRADUATE COURSES:

HURE 210. Staffing Work Organizations 3 sem. hrs.

Studies theories and practices relevant to staffing work organizations. Topics include: reliability and validity of selection procedures, criterion development, evaluation of alternative selection procedures and compliance with equal employment opportunity, affirmative action as well as other relevant regulations. Offered occasionally. *Prereq:* HURE 212 or equiv.; *cons. of M.S.H.R. dir.*

HURE 211. 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. Offered occasionally. *Prereq:* Cons. of M.S.H.R. dir.

HURE 212. Human Resource Statistics and Research Design 3 sem. hrs.

Addresses the topics of measurement, sampling and research design in the context of human resources management systems. Statistical methods studied include analysis of variance, analysis of covariance, correlation, regression, multiple regression, as well as selected nonparametric statistics and measures of association. Extensive use of human resource management examples will be employed to facilitate transfer to work organization settings. Offered occasionally. *Prereq:* Cons. of M.S.H.R. dir.

HURE 220. Training and Development

3 sem. hrs.

Addresses principles and factors that contribute to the personal growth and development of employees. Focuses on training and employee development within work organizations. Training includes program development, principles of learning, training techniques and evaluation. Employee development topics involving career planning and management will also be addressed. Offered occasionally.

Prereq: Cons. of M.S.H.R. dir.

HURE 221. Diversity in Organizations

3 sem. hrs.

Focuses on the complex dynamics of diversity in organizations as seen from the vantage point of social science and organizational studies. Examines demographic trends in the work force, differentiates cultural practices and value among diverse groups, and discusses strategies for dealing with discrimination and stereotyping. The focal themes of the course include: the nature or character of diversity, organizational practices, and theoretical implications. Individual, interpersonal and organizational factors influencing diversity will be examined using both a conceptual and an experiential approach. Offered occasionally. *Prereq: Cons. of M.S.H.R. dir.*

HURE 230. Employee Compensation

3 sem. hrs.

Focuses on theory and practice relevant to the development of compensation systems which are internally consistent, externally competitive and individually motivating. Topics include: motivation theories; job evaluation methods; salary and benefit surveys; pay structures; and alternative compensation plans, including gain-sharing, broadbanding and pay-for-knowledge. Relevant government regulations are also studied. Offered occasionally. *Prereq: Cons. of M.S.H.R. dir.*

HURE 231. Employee Benefit Systems

3 sem. hrs.

Addresses the design and administration of employee benefit systems. Among the programs studied are: health insurance and wellness programs; pensions, salary reduction and deferred compensation; pay for time not worked; and cafeteria plans. State and federally mandated employee benefits, as well as tax issues related to employee benefit systems are investigated. Offered occasionally. *Prereq: Cons. of M.S.H.R. dir.*

HURE 240. Labor Relations

3 sem. hrs.
The objectives of this course are to: 1) survey the alternative philosophies and approaches to labor relations taken by U.S. companies, 2) assess the potential costs and benefits of each approach, 3) analyze case studies of organizations which have taken each approach, both among competitors in other countries as well as within the U.S., and 4) identify strategies for pursuing each alternative within the constraints of current U.S. labor law. A recurring theme will be labor-management conflict versus cooperation. Within this broad framework, basic skills in U.S. labor law governing union organizing and bargaining, grievance and arbitration procedures, and cooperative programs will be developed. Offered occasionally. *Prereq: Cons. of M.S.H.R. dir.*

HURE 241. Negotiations

3 sem. hrs.
Provides a comprehensive investigation of the process and dynamics surrounding adverse variety of negotiations and conflict resolution efforts. Both academic models of negotiations and actual events, historical and contemporary, will be examined in detail. Strategies and tactics for achieving objectives, limiting losses and maintaining positive relations will be emphasized in light of radically changing social and business climates. Methods for becoming an effective negotiator will be presented through both analytical frameworks and experiential opportunities. Cost/benefit assessment of negotiations will be developed in the actual costing of an agreement and the impact of failing to achieve an agreement and having to resort to alternative options. Offered occasionally. *Prereq: Cons. of M.S.H.R. dir.*

HURE 250. 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. Offered occasionally. *Prereq: Cons. of M.S.H.R. dir.*

HURE 251. Human Resources Strategy and Planning

3 sem. hrs.
Investigate principles of human resource strategy and the link to business strategy. Concepts emphasized include resource-based theory of the firm, sustained competitive advantage, as well as fit and flexibility in the design of human resource systems. Approaches to evaluating and assessing the contribution and effectiveness of human resource systems are studied. *Prereq: Completion of BUAD 262 for BUAD graduate students; completion of 9 HURE credits for HURE students; and cons. of the M.S.H.R. dir.*

HURE 259. Seminar in Human Resources

1-3 sem. hrs.
Intensive treatment of selected human resource topics. Topics vary. Offered occasionally. *Prereq: Cons. of M.S.H.R. dir.*

HURE 295. Independent Study

1-3 sem. hrs.
Offered every term. *Prereq: Cons. of dept. ch.; cons. of M.S.H.R. dir.*

HURE 891. Continuous Enrollment — Less than Half-Time

0 sem. hrs.
Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.*

HURE 892. Continuous Enrollment — Half-Time

0 sem. hrs.
Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.*

HURE 893. Continuous Enrollment — Full-Time

0 sem. hrs.
Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.*

CHEMISTRY (CHEM)

Chairperson and Associate Professor:
Hossenlopp

Professor: Cremer (*Emeritus*), Donaldson, Haworth, N. Hoffman (*Emeritus*), Jache (*Emeritus*), Kincaid, McKinney, Nakamoto (*Emeritus*), S. Reid, Ryan, Schrader (*Research Professor*), Steinmetz, Tran, Wilkie
Associate Professor: Rathore, Yi
Assistant Professor: Babikov, Gardinier, Sem
Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREES OFFERED

Master of Science, students are admitted under Plan A (thesis option) but Plan B (non-thesis option) is also offered; Doctor of Philosophy

SPECIALIZATIONS

Analytical Chemistry, Bioanalytical Chemistry, Biophysical Chemistry, Chemical Physics, Inorganic Chemistry, Organic Chemistry, Physical Chemistry

Subspecialty areas of research within the Department of Chemistry include: photochemistry; molecular spectroscopy; organometallic, physical organic, bioorganic, polymer, and theoretical chemistry; and chemical dynamics.

PROGRAM DESCRIPTION

The Department of Chemistry offers graduate degree programs for both full- and part-time students. Two tracks of study are offered:

1) Plan A: preparation for a career as a professional chemist and 2) Plan B: enhancement of scientific background for persons employed as high school science teachers. The heart of the professional track is research, conducted in concert with a faculty mentor. The focus of the background track is enrichment and strengthening of the skills that teachers bring to their students. Plan B, the background track, is offered only at the master's level.

PREREQUISITES FOR ADMISSION

Applicants should have graduated with, or be about to graduate with, a bachelor's degree from an accredited institution. The minimum prerequisite for any graduate course is one year of undergraduate physical chemistry. In addition, an undergraduate course in an area of study (e.g., analytical, inorganic, organic) appropriate to the graduate course involved is required. A student's undergraduate grade point should be equivalent to a B (3.00) or above.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation from individuals familiar with the applicant's academic work.
4. (*For international applicants only*) a TOEFL score or other acceptable proof of English proficiency.
5. GRE scores are optional, but it is to the applicant's advantage to have taken the Subject Test for chemistry.

GENERAL INFORMATION

For more detailed and comprehensive information about the master of science and doctoral programs in chemistry, students should consult the most recent edition of the Chemistry Department's *Graduate Student Handbook*. This publication defines the current rules and guidelines that govern department and program requirements.

FOREIGN LANGUAGE REQUIREMENTS

Normally, no reading knowledge of a foreign language is required in either the master's or doctoral programs. However, at the discretion of the student's thesis or dissertation committee, proficiency in a foreign language may be required if it is necessary in the student's research.

PROFICIENCY EXAMINATIONS

Incoming chemistry students must pass three proficiency examinations, which may be selected from among the four traditional areas of chemistry (analytical, inorganic, organic, and physical chemistry). Incoming chemical physics students must pass proficiency examinations in physics, physical chemistry, and one other area of chemistry. These examinations can be repeated up to two times each, and the student must pass three by the end of his/her second term of full-time study or the equivalent.

MASTER'S REQUIREMENTS

A program for the master's degree is determined by the student's research adviser in consultation with the student's thesis committee.

All students are admitted to the program under Plan A but may transfer to Plan B if a *Change of Plan* form is submitted and approved. In Plan A (research option), the student must complete 24 credit hours of course work and six credit hours of CHEM 299 for a total of 30 credit hours. Six credit hours of course work may be CHEM 295 (Independent Study). The student must submit a thesis describing a substantial research project completed by the student in a mentor-professor's laboratory. Public defense of the thesis constitutes a comprehensive examination.

In Plan B (essay option), the student must complete 24 credit hours of course work and six credit hours of CHEM 299 for a total of 30 credit hours. An essay must also be submitted. Up to six credits of course work may be CHEM 295. The essay will include a review of the literature of some area of chemistry and a proposal of how knowledge in that area might be extended by research. Public defense of the essay constitutes a comprehensive examination.

DOCTORAL REQUIREMENTS

A program for the doctoral degree is determined by the student's research adviser in consultation with the student's dissertation committee.

A doctoral student must complete a program of study defined on an approved *Doctoral Program Planning Form*. Normally, the student will be required to complete 30 credit hours of course work and 12 credit hours of CHEM 399 for a total of 42 post-bachelor's degree credit hours. An intense program of laboratory instruction and research to begin no later than the

second term of study is also required. Nine credit hours of course work may be CHEM 295 (Independent Study). In addition, seminar course work (CHEM 296) is required for the program but earns no credit. A series of cumulative examinations constitutes a qualifying examination. Eight of these examinations are given each year. The student is expected to pass five of them by the end of the third year of doctoral study. The student must submit a dissertation describing a significant body of independent research carried out in concert with a faculty mentor. The dissertation must be of a caliber that would be publishable in the leading scientific journals. A public defense of the dissertation is required.

COURSE DESCRIPTIONS

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

* Does not carry graduate credit for Chemistry graduate students.

CHEM 105. Inorganic Chemistry 3 sem. hrs.

CHEM 123. Organic Chemistry for Majors 1 *
4 sem. hrs.

CHEM 124. Organic Chemistry for Majors 2 *
4 sem. hrs.

CHEM 125. Introduction to Biochemistry
3 sem. hrs.

CHEM 129. Characterization of Organic Compounds 3 sem. hrs.

CHEM 131. Physical Chemistry: Fundamentals with Applications in Biological Sciences * 3 sem. hrs.

CHEM 132. Physical Chemistry 1 *
3 sem. hrs.

CHEM 133. Physical Chemistry 2 *
3 sem. hrs.

CHEM 160. Introduction to Polymer Science
3 sem. hrs.

CHEM 166. Introduction to Quantum Chemistry 3 sem. hrs.

GRADUATE COURSES:

CHEM 201. Advanced Inorganic Chemistry 1
3 sem. hrs.

Atomic and molecular structure, chemistry of the compounds of metals, transition metals and nonmetals, introduction to symmetry, ligand field theory, mechanisms, acids and bases, non-aqueous solvents, organometallic compounds, and applications of spectroscopy. Offered spring term.

CHEM 202. Advanced Inorganic Chemistry 2
3 sem. hrs.

Special emphasis on such topics as nonaqueous solvents, mechanisms of inorganic reactions, inorganic polymers, descriptive chemistry, coordination chemistry, organometallic chemistry, point group classification, spectroscopy as applied to inorganic compounds, inorganic biochemistry, and current inorganic literature. Offered occasionally.

CHEM 203. Selected Topics in Inorganic Chemistry 1-3 sem. hrs.

Topics of current interest in inorganic chemistry. Offered occasionally.

CHEM 221. Organic Reactions 3 sem. hrs.
Scope and limitations of modern techniques of synthesis utilizing addition, elimination, oxidation, reduction, substitution, rearrangement, and concerted reactions. Attention to mechanisms and stereochemistry. Offered annually.
Prereq: CHEM 223.

CHEM 223. Modern Concepts of Organic Chemistry 3 sem. hrs.

Stereochemistry, structure-reactivity, and linear free energy relationships. Chemistry of reaction intermediates and mechanistic approaches to problems. Offered fall term.

CHEM 226. Selected Topics in Organic Chemistry 1-3 sem. hrs.

Topics of current interest in organic chemistry. Offered occasionally. *Prereq:* CHEM 223.

CHEM 233. Mechanisms of Organic Reactions 3 sem. hrs.

Fundamental principles of physical organic chemistry. Mechanisms of common organic reactions with emphasis on polar mechanisms. Introduction to Hückel and extended Hückel molecular orbital calculations. Offered occasionally. *Prereq:* CHEM 223.

CHEM 246. Physical Methods of Analysis
3 sem. hrs.

Review of equilibria, principles and practice of spectrophotometry, electroanalysis and separation methods. Offered spring term.

CHEM 252. Analytical Separations
3 sem. hrs.

Emphasis on gas chromatography and high performance liquid chromatography. Also included: other forms of chromatography, electrophoresis and related techniques, distillation, extraction, dialysis. Offered alternate years.

CHEM 255. Spectrochemical Methods of Analysis 3 sem. hrs.

Discussion of modern instrumentation for spectrochemical analysis including conventional sources, lasers, monochromators and detection systems. Review and comparison of methods and applications of various spectrochemical techniques for the analysis of atomic and molecular species. Offered alternate years.

CHEM 257. Electroanalytical Methods
3 sem. hrs.

Electroanalytical methods for analysis and as a probe of homogeneous and heterogeneous redox processes with major emphasis on voltammetric, coulometric, potentiostatic and potentiometric methods. Also the redox chemistry of important organic, inorganic and organometallic compounds. Offered alternate years.

CHEM 258. Selected Topics in Analytical Chemistry 1-3 sem. hrs.

Topics of current interest in analytical chemistry. Offered occasionally.

CHEM 260. Advanced Physical Chemistry
3 sem. hrs.

Atomic and molecular structure and chemical bonding from the point of view of quantum mechanics; illustrations from spectroscopy. Offered alternate years.

CHEM 262. Research Tools in Physical Chemistry 3 sem. hrs.

Group theory (formal theory, theory of representations, point groups, applications to atoms and molecules), molecular orbital theory, and computational chemistry (molecular mechanics, semiempirical and ab initio molecular orbital calculations). Offered fall term.
Prereq: CHEM 133.

CHEM 263. Introduction to Spectroscopy
3 sem. hrs.

Basic theory of chemical spectroscopy. Time-dependent Schrödinger wave equation, and the emission and absorption of radiation. Group theory and selection rules. Electronic spectra and structure of atoms and molecules. Rotations and vibrations of molecules. Spin resonance spectroscopy. Offered occasionally.
Prereq: CHEM 260.

CHEM 264. Statistical Thermodynamics
3 sem. hrs.

Applications of statistical methods to chemical systems at equilibrium, including the calculations of thermodynamic functions, the properties of gases, and the theories of the liquid state. Introduction to non-equilibrium statistics and quantum statistics. Offered occasionally.

CHEM 265. Chemical Kinetics 3 sem. hrs.
Mathematical and phenomenological description of chemical rate processes and application to the solution of chemical problems. Offered alternate years.

CHEM 266. Advanced Quantum Chemistry
3 sem. hrs.

The application of advanced topics and methods of quantum mechanics to chemistry. Offered occasionally. *Prereq: CHEM 260.*

CHEM 268. Infrared and Raman Spectroscopy 3 sem. hrs.

General theories of molecular vibrations and applications of infrared and Raman spectroscopy to chemical problems. Offered occasionally.

CHEM 269. Selected Topics in Physical Chemistry 1-3 sem. hrs.

High temperature chemistry, hot atom chemistry, phase equilibria, theoretical chemistry, and other special topics of current interest. Offered occasionally.

CHEM 295. Independent Study 1-3 sem. hrs.
Offered every term. *Prereq: Cons. of dept. ch.*

CHEM 296. Departmental Seminar
0 sem. hrs.

Papers and discussions as a means of interpreting present trends in chemical research. Required of all full-time graduate students in chemistry. Offered every term. S/U grade assessment.

CHEM 297. Special Topics in Chemistry
0-1 sem. hrs.

Topics of current interest in chemistry. Offered every term. S/U grade assessment.

CHEM 299. Master's Thesis 1-6 sem. hrs.
Offered every term. *Prereq: Cons. of dept. ch.*

CHEM 399. Doctoral Dissertation
1-9 sem. hrs.

Offered every term. *Prereq: Cons. of dept. ch.*

CHEM 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.*

CHEM 892. Continuous Enrollment — Half-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.*

CHEM 893. Continuous Enrollment — Full-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.*

CIVIL ENGINEERING (CIEN)

Chair and Professor: Switzenbaum

Director of Graduate Studies and Professor: Heinrich

Professor Emeriti: Faherty, Murphy, Novotny, Zaroni

Professor: Karshenas, Vinnakota

Associate Professor: Crandall, Croveti,

Drakopoulos, Foley, Melching, Wenzel, Zitomer

Assistant Professor: Wan

Adjunct Professor: Bauer, Kuemmel

Adjunct Associate Professor: Sonntag, Vogel

Adjunct Assistant Professor: Dobersek, Meus
Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREES OFFERED

Master of Science; Doctor of Philosophy

MISSION STATEMENT

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. They will advance the state of technical and scientific knowledge through research and provide service to civic and professional communities.

SPECIALIZATIONS

Construction/Public Works Management, Environmental/Water Resources Engineering, Structural/Geotechnical Engineering, Transportation Engineering and Planning

PROGRAM DESCRIPTIONS

CERTIFICATE PROGRAMS

In addition to its master's and doctoral programs, the Department of Civil and Environmental Engineering offers non-degree graduate certificate programs in the following technical areas:

Construction Engineering and Management
Structural Design

Transportation

Water and Wastewater Treatment

Processes

Water Resources Engineering

Certificate programs in other technical areas can be developed and completed with the aid of an academic adviser, subject to department approval.

The certificate programs are designed for practicing engineers and other qualified individuals with bachelor's degrees, who wish to update and/or expand their knowledge in specific technical areas, but do not necessarily wish to pursue master's or doctoral degrees.

DEGREE PROGRAMS

The master of science and doctor of philosophy degree programs are designed to provide graduate students with both broad fundamental knowledge and up-to-date information on current and emerging technologies. Students may enroll on either a full-time or part-time basis. Doctoral students and research-oriented master's students (e.g., Plan A) engage in research activities under the close supervision of their advisers, gradually learning to become independent researchers. Their projects are often supported by government and industry grants. Courses and research projects make significant use of the department's extensive laboratory and computational facilities. Graduates find employment in industry, government, academia, and research laboratories.

PREREQUISITES FOR ADMISSION

Applicants should have graduated with, or be about to graduate with, a baccalaureate degree in an appropriate area of study from an accredited institution.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation.
4. *(For international applicants only)* a TOEFL score or other acceptable proof of English proficiency.
5. *(For non-degree certificate applicants only)* a certificate course work planning form, prepared in consultation with an adviser from the department.
6. *(For doctoral and all international applicants)* GRE scores (General Test only).
7. The GRE is recommended for, and may be requested of, master's applicants with undergraduate grade point averages less than 3.00 out of 4.00.
8. *(For doctoral applicants only)* a brief statement of purpose and copies of any published work, including master's theses and essays.

RESEARCH ACTIVITIES

The Department of Civil and Environmental Engineering maintains laboratories related to studies in hydraulics, environmental engineering, structural testing, geotechnical engineering, and concrete and asphalt, as well as computational facilities. Associated with the department are three research centers: Water Quality Center, Transportation Research Center, and the Institute for Urban Environmental Risk Management.

Research interests of the faculty include: retrofit and repair of structures, high-performance materials, prestressed concrete, non-linear analysis of steel frames, application of evolutionary computation in structural engineering, fatigue performance of auxiliary highway structures, microcantilever beam sensors, computer applications in construction, development of load resistance models for wood formworks, accident experience with ice control operations, accident analysis of abrasives or abrasive salt mixtures used as the general procedures for snow and ice control, real time control of wastewater control systems, stochastic water quality models, optimization of the central control system—Milwaukee Metropolitan Sewerage District, residuals management, design and analysis of solder joints in microelectronics, membrane water softening, rutting study of asphalt using the loaded wheel tester, use of recycled rubber in concrete pavement, impacts of pavement surface textures, effects of grinding on PCC pavements, pavement performance inputs for life-cycle cost analysis, driver understanding of traffic signals, traffic accident relations with roadway geometry, finite element analysis of pavement structures, environmental risk management, nitrogen removal from septic tank effluents, biological treatment of papermill wastewater, using plants to remove soil pollutants: phytoremediation, detoxification of a broad range of chemicals: methanogenic, low aeration system, use of ceramic microfiltration for treatment of filter waste washwater.

BACHELOR'S-MASTER'S PROGRAM

The department offers a five-year combined bachelor's-master'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 G.P.A. of 3.50 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.

In addition to completing their undergraduate degree requirements, students will take master's level courses in 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 the summer between the junior and senior years. Students will continue to gain research experience during the summer between the senior and fifth years, continuing throughout the fifth year and culminating in preparation of a written thesis and defense. Combined bachelor's-master's programs following Plan B (course work option) may also be designed for completion in five years.

CERTIFICATE REQUIREMENTS

Each graduate certificate program requires completion of four courses (12 credits) selected from a prescribed list of courses pertinent to the area of study. All courses taken must be approved for graduate credit, and at least two of the courses must be strictly graduate level (courses numbered 200 or above). Students must complete all courses within a three-year time period and must earn a grade point average of at least 3.00 with no grade below a C.

MASTER'S REQUIREMENTS

Students may earn a master's degree under either Plan A (thesis) or Plan B (non-thesis). Regardless of the option chosen, at least one-half of the total course work requirement must be taken at the 200-level. In most cases, master's students are admitted to the program under Plan B but may transfer to Plan A with permission from their adviser. Note that recipients of teaching or research assistantships are required to pursue Plan A (thesis option).

Plan A requires the student to complete 30 credit hours (24 hours of course work, 6 hours of thesis work), submit an approved thesis, and pass a final oral comprehensive examination (thesis defense). The comprehensive exam for Plan A is focused mainly on the student's thesis topic.

Under the Plan B option, students must complete 30 credit hours of course work and pass a final comprehensive examination. The comprehensive exam for Plan B is usually an oral exam, administered by the student's three-person master's committee. The scope of the Plan B comprehensive exam may span the student's entire body of course work.

Both Plans A and B require that at least 18 credit hours be from the Department of Civil and Environmental Engineering course offerings.

DOCTORAL REQUIREMENTS

A doctoral student must complete a program of study prepared in consultation with his or her doctoral adviser and outlined on an approved *Doctoral Program Planning Form*. The program normally requires 60 credit hours of course work beyond the baccalaureate degree plus 12 credit hours of dissertation work. The student must also pass a doctoral qualifying examination and submit and successfully defend a dissertation.

The doctoral qualifying examination normally consists of both written and oral tests and is administered after the student has completed 42 to 48 credit hours of graduate study. Each faculty member on a doctoral candidate's committee may submit questions for the written examination. The doctoral committee, as a whole, gives the oral examination.

The dissertation must represent an original research contribution showing high attainment and clear ability to do independent research. A public defense of the dissertation (the final oral examination) is administered after the student has completed all other formal requirements for the doctoral degree.

All doctoral students must demonstrate a proficiency in the research tools of probability and statistics through course work in MATH 160 or 164, or their equivalents.

Each doctoral program must include a minor area of study outside of the student's area of specialization. A minor normally consists of a minimum of 12 credits taken within one subject area. Minors in the areas of mathematics, chemistry, biology, engineering mechanics, mechanical engineering, soil mechanics and foundations, systems analysis, urban planning, business administration, or physics are acceptable for a doctoral student in the Department of Civil and Environmental Engineering.

COURSE DESCRIPTIONS

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

CEEN 111. Matrix Structural Analysis
3 sem. hrs.

CEEN 114. Steel Design 2
3 sem. hrs.

CEEN 123. Urban Hydrology and Stormwater Management 3 sem. hrs.

CEEN 124. Air Pollution Engineering
3 sem. hrs.

CEEN 127. Water Resources Engineering
3 sem. hrs.

CEEN 128. Groundwater Engineering
3 sem. hrs.

CEEN 129. Geographical Information Systems in Engineering and Planning
3 sem. hrs.

CEEN 145. Advanced Strength and Applied Stress Analysis 3 sem. hrs.

CEEN 146. Advanced Concrete and Masonry Design 3 sem. hrs.

CEEN 147. Prestressed Concrete Design
3 sem. hrs.

CEEN 148. Timber Structures
3 sem. hrs.

CEEN 149. Bridge Design
3 sem. hrs.

CEEN 154. Environmental Chemistry
3 sem. hrs.

CEEN 155. Industrial Wastewater Management 3 sem. hrs.

CEEN 156. Treatment Plant Design and Operation 3 sem. hrs.

CEEN 157. Hazardous and Industrial Waste Management 3 sem. hrs.

CEEN 158. Environmental Engineering Microbiology 3 sem. hrs.

CEEN 159. Municipal Solid Waste Management 3 sem. hrs.

CEEN 163. Foundation Engineering
3 sem. hrs.

CEEN 174. Pavement Design
3 sem. hrs.

CEEN 175. Pavement Management
3 sem. hrs.

CEEN 177. Advanced Transportation Materials 3 sem. hrs.**CEEN 181. Construction Cost Analysis and Estimating** 3 sem. hrs.**CEEN 185. Urban Planning for Civil Engineers** 3 sem. hrs.**CEEN 188. Topics in Civil Engineering** 1-3 sem. hrs.**CEEN 193. Health, Environment and Infrastructure in Latin America** 3 sem. hrs.**GRADUATE COURSES:****CEEN 210. Numerical Analysis with Structural Application** 3 sem. hrs.

Interpolation polynomials; numerical integration and differentiation; Taylor series, Fourier, cubic spline, and least-squares polynomial approximations; numerical solution of initial-value problems by Prediction-Correction and Runge-Kutta methods; numerical solution of boundary-value problems by finite difference method; numerical solution of integral equations; approximate solution of ordinary differential equations by weighted residuals and Galerkin methods; approximate solution of variational problems by Rayleigh-Ritz method. Offered alternate spring terms.

CEEN 213. Plastic Analysis of Structures 3 sem. hrs.

Plastic analysis of beams and frames. The plastic hinge as influenced by shear and axial force. The tools of plastic design: Virtual work, upper and lower bound methods. The combination of mechanisms. Limit analysis of plates. Elastic-plastic analysis of multi-story frames. Offered occasionally.

CEEN 215. FRP in Civil Engineering Infrastructure 3 sem. hrs.

Introduces Fiber Reinforced Polymer (FRP) material properties, FRP reinforced concrete, FRP prestressed concrete, FRP repaired and retrofitted structures, and pure FRP structures. *Prereq: CEEN 144 or equiv. reinforced concrete design course.*

CEEN 217. Structural Dynamics 3 sem. hrs.

Formulation of single-degree-of-freedom (SDOF) equation of motion; generalized SDOF systems; free-vibration response; harmonic excitation; periodic loading and Fourier series; impulsive loads; response (shock) spectra; general response by Duhamel and Fourier integrals; non-linear dynamic analysis; Rayleigh's method; formulation of multiple-degree-of-freedom (MDOF) equations of motion; structural property matrices and load vectors; eigenvalue problem for natural frequencies and mode shapes; orthogonality of mode shapes; mode superposition. Offered fall term.

CEEN 218. Advanced Steel Design 3 sem. hrs.

Selected topics in advanced steel structural design; interpretation of specifications and codes for the elastic and plastic design of steel buildings. Discussion of the behavior of steel connections, members and structures; the relationship between behavior and design specifications. Offered fall term. *Prereq: CEEN 114.*

CEEN 219. Topics in Reinforced Concrete 3 sem. hrs.

Selected topics in advanced concrete structural analysis and design; torsion; interaction surfaces for beam-columns; two-way slab systems; analysis and design of walls for low-rise and multi-story buildings; shearwall-frame interaction; brackets, corbels and beam ledges; deep beams; concrete building systems; beam-to-column joint design. Discussion of the behavior of concrete members and structures and study of the relationship between behavior and design specifications. Use of commercial computer programs and their application in the design of concrete structures and components. Offered occasionally. *Prereq: CEEN 110 and CEEN 111 and CEEN 144; or cons. of instr.*

CEEN 220. Structural Engineering for Natural Hazard Mitigation 3 sem. hrs.

Introduction to the mechanics of ground motion (earthquake), the nature of wind (hurricane and tornado) and the effects of these phenomena on building and bridge structures. Introduction to structural dynamic principles in relation to structural analysis for wind and earthquake generated forces. Lessons learned from past earthquakes and extreme wind events. Discussion of the philosophies upon which code mandated earthquake and wind design forces are based (IBC, NEHRP). Introduction to state-of-the-art methods for estimating forces generated by tornadic winds and design of tornado shelter. Offered alternate spring terms. *Prereq: CEEN 110 and CEEN 111 and CEEN 113 and CEEN 144; or cons. of instr.*

CEEN 221. Nonlinear Structural Analysis 3 sem. hrs.

Application of the principle of virtual displacements in the formulation of element stiffness equations that include geometric and material nonlinearity. Determination of critical (buckling) loads of structural systems using eigenvalue analysis. Formulation and application of algorithms for nonlinear structural analysis. Application of commercial software in geometrically nonlinear analysis, materially nonlinear analysis, and critical load (buckling) analysis. Offered alternate spring terms. *Prereq: CEEN 111 or equiv.*

CEEN 242. Theory of Elasticity 3 sem. hrs.

Mathematical preliminaries (indicial notation, vectors, Cartesian tensors, coordinate transformations, eigenvalue problems, divergence theorem); kinematic relations (strain-displacement and compatibility); stress tensor and traction vector; differential and virtual work expressions of equilibrium; constitutive relations; stored energy functions; formulation of elastostatics boundary value problems; uniqueness theorems; theorem of minimum potential energy; Saint-Venant's principle; Saint-Venant beam theory; plane stress and plane strain. Offered spring term.

CEEN 243. Stability of Structures 3 sem. hrs.

Elastic in-plane stability of columns, beams, frames, and trusses. Flexural-torsional buckling of beams. Stability of plates. Application of finite difference methods to stability problems. Offered alternate fall terms.

CEEN 245. Introduction to the Finite Element Method 3 sem. hrs.

Theoretical development of the finite element method (FEM) of analysis, with particular emphasis on problems of solid mechanics; development of element stiffness matrices for axial, beam, plane stress, plane strain, plate, shell, and solid elements; synthesis of global stiffness matrix, solution of the finite element equations; introduction to numerical implementation of FEM and general purpose FEM software. Offered alternate fall terms.

CEEN 246. Applied Finite Element Analysis and Modeling 3 sem. hrs.

Review of linear elastic finite element analysis (FEA) theory in solid/structural mechanics; review of commercial FEA code use (ANSYS®) in linear elastic applications; introduction to advanced theories, including theories of vibration, material nonlinearities, geometric nonlinearities, structural instabilities, and/or time-dependent deformations (creep); use of ANSYS® to simulate complex structural behavior; model development, verification, and improvement. Offered alternate spring terms. *Prereq: CEEN 245 or equiv.*

CEEN 248. Advanced River Engineering 3 sem. hrs.

Offers a solid background in the basic principles of open-channel hydraulics, gradually-varied flow, rapidly-varied flow, hydrologic and hydraulic flood routing, and river restoration/naturalization. Hand calculations of numerous open-channel flow problems, and application of the HEC-RAS program for backwater analysis and for flood routing in combination with HEC-1. Includes concepts for stream restoration/naturalization.

CEEN 249. Advanced Hydrology 3 sem. hrs.

Development, calibration, and application of rainfall-runoff models. Submodels available to simulate abstractions, hydrograph generation, and flow routing discussed in detail. Design storm and continuous simulation approaches described and compared. Hands on applications of commonly applied computer simulation models. Model capabilities and limitations discussed. Offered occasionally. *Prereq: CEEN 123; or cons. of instr.*

CEEN 250. Watershed Planning 3 sem. hrs.

Relation between water quality and quantity and economical development. Effect of urbanization and industrialization on water resources. Special topics include: water demand, pollutant loads from point and nonpoint sources, watershed planning and management process. Total Maximum Daily Load (TMDL) process, economic principles in planning, water quantity and quality modeling, benefit cost ratio in water resources planning, institutions, legislation and laws. Offered occasionally. *Prereq: CEEN 123; or cons. of instr.*

CEEN 251. Water Quality Modeling and Management 3 sem. hrs.

Water and environment. Water quality criteria and standards. Attainability of water quality goals. Oxygen balance and self-purification. River, estuaries, and reservoirs water quality modeling. Toxicity and bioassays. Limnological aspects, waste assimilative capacity.

Groundwater protection, river and estuary and groundwater quality management systems. Offered alternate fall terms.

Prereq: CEEN 126; or cons. of instr.

CEEN 252. Biochemical Transformations in the Environment 3 sem. hrs.

Study of biologically catalyzed chemical transformations in natural and engineered environments. Presentation of microbiology, biologically important oxidation-reduction reactions, bioenergetic principles, fermentation kinetics, and toxicity considerations relating to wastewater treatment and remediation of contaminated groundwater and soil. Review of aerobic processes for biochemical oxygen demand reduction and ammonia oxidation, anoxic processes for denitrification, and anaerobic processes for reductive dechlorination. Offered alternate spring terms. *Prereq: CEEN 156; or cons. of instr.*

CEEN 253. Environmental Laboratory 1 - Analyses 3 sem. hrs.

Physical, chemical and biological analyses for the characterization of waters, wastewaters, solid wastes, sludges and leachates. Use of modern instrumentation in laboratory analyses. Applicability of analytical results to the environmental field. Offered fall term. *Prereq: CEEN 150 or equiv. and CEEN 154 or equiv.*

CEEN 254. Environmental Laboratory 2- Processes 3 sem. hrs.

Theoretical principles and laboratory experimentation governing the processes of settling, coagulation, adsorption, flotation, disinfection, oxygen transfer, biological treatment, and sludge conditioning, thickening and dewatering. Offered alternate spring terms. *Prereq: CEEN 156 and CEEN 253; or cons. of instr.*

CEEN 258. Hazardous Waste Remediation Technologies 3 sem. hrs.

Hazardous waste remediation technology selection. Chemical kinetics, equilibria and mass transfer. Aqueous phase treatment and solid/liquid separation processes. Physical, chemical and biological interactions under environmental conditions. Specific technologies will include: physical barriers, bioremediation, and soil vapor extraction, soil flushing and chemical extraction, immobilization and chemical and thermal destruction technologies. Multi-media, multi-contaminant treatment approaches. Computer model simulations and case studies. Offered occasionally. *Prereq: CEEN 154 and CEEN 156; or cons. of instr.*

CEEN 259. Physical and Chemical Processes of Environmental Engineering 3 sem. hrs.

Theory and design of unit operations and processes utilized for the treatment of water and wastewater, including coagulation, flocculation, sedimentation, filtration, adsorption, ion exchange and aeration. Offered occasionally. *Prereq: CEEN 154 and CEEN 156.*

CEEN 266. Geotechnical Aspects of Waste Disposal 3 sem. hrs.

Review of basic soil mechanics, use of soil maps and boring logs. Site investigations using soil borings, test pits, and laboratory and field permeability tests. Basic geological and hydrogeological considerations in site selection. Geotechnical aspects of landfill design, includ-

ing clay and synthetic membrane liners, cover soil, leachate collection, and cut-off walls, among others. Offered occasionally.

CEEN 270. Bituminous Materials 3 sem. hrs. Study of the behavior and properties of asphalt cement and hot mix asphalt pavement materials. The chemistry and rheological properties of asphalt cement as well as the physical properties of aggregates are examined. Aspects of pavement performance related to asphalt and aggregate properties are studied. Mix design methods currently utilized for hot mix asphalt production and performance-based laboratory tests are examined. Offered alternate spring terms. *Prereq: CEEN 43 and CEEN 177; or equiv.*

CEEN 271. Advanced Traffic Characteristics and Design 3 sem. hrs.

Components of the Traffic System: Vehicle and Road User characteristics, geometric design, traffic controls. Intersection types, cross-section design elements and typical dimensions. Basic variables of traffic flow, observed traffic flow values. Freeway operations. Signalized intersection: flow, capacity, level of service. Projects addressing: intersection existing conditions (traffic, geometry, signalization); approach delay; safety performance; capacity; suggestions for improvements. Use of the Highway Capacity Manual and the Highway Capacity Software. Emphasis on technical report-writing and presentation. Offered fall term. *Prereq: CEEN 170 or equiv.*

CEEN 272. Urban Street Design 3 sem. hrs. Planning considerations, highway system components, design elements, including horizontal and vertical alignment, cross sectional elements, sight distance, intersections, parking, one way streets, mass transit and bicycle considerations. Offered fall term. *Prereq: CEEN 170 or equiv.*

CEEN 273. 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 170 or equiv.*

CEEN 274. Advanced 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 alternate fall terms. *Prereq: CEEN 174 or equiv.*

CEEN 275. 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 172 and CEEN 176; or cons. of instr.*

CEEN 276. Advanced 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 aided traffic engineering. Offered alternate spring terms. *Prereq: CEEN 176; or cons. of instr.*

CEEN 277. Advanced Traffic Management 3 sem. hrs.

Planning and operational considerations of advanced freeway traffic management, incident management and traffic signal control systems, freeway corridor management, integration of transportation control systems, interrelationships and deployment of key elements of Intelligent Transportation Systems (ITS). Offered alternate spring terms. *Prereq: CEEN 176; or cons. of instr.*

CEEN 278. Advanced Highway Planning and Design 3 sem. hrs.

Highway planning. Alternative highway alignments. Alternative evaluation. Geometric design of highways: horizontal and vertical alignment, cross-section design. Projects on detailed design or reverse curves (plan and profile views); intersection design; cross-section and earthwork quantities. Legal aspects of engineering. Use of the American Association of State Highway and Transportation Officials (AASHTO) design guidelines, the Manual on Uniform Traffic Control Devices (MUTCD), Wisconsin Department of Transportation Facilities Development Manual (FDM) and CalTRANS Design Manual. Technical literature review on geometric design topic. Offered spring term. Two hrs. lecture, two hrs. lab. *Prereq: CEEN 170; or cons. of instr.*

CEEN 279. Environmental Impacts of Transportation 3 sem. hrs.

Environmental impact analysis, including air quality analysis, noise impact methodology, energy policy issues, water quality and transportation impacts on wetlands and land use impacts of transportation. Offered alternate spring terms. *Prereq: CEEN 170; or cons. of instr.*

CEEN 280. Construction Equipment and Methods 3 sem. hrs.

Construction equipment cost 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.

CEEN 285. 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: CEEN 180 and MATH 164; or cons. of instr.*

CEEN 286. Public Works Administration 1
3 sem. hrs.

Study of the duties and responsibilities of Public Works Administration. Internal management and organizational requirements and procedures for the operations of the organization are covered. Offered occasionally.

CEEN 287. Public Works Administration 2
3 sem. hrs.

Study of the duties and responsibilities of Public Works Administration. The managerial requirements and procedures of external relations are covered, along with political, social and ethical considerations. Offered occasionally.

CEEN 288. Object-Oriented Analysis and Design for Engineers 3 sem. hrs.

Application of the engineering systems development model to software analysis and design. Object-oriented concepts including classes, inheritance, polymorphism, and relationships. Component based design. Application of object technology in modeling and implementation of large engineering systems using a modern object-oriented language. *Prereq: Familiarity with a computer language.*

CEEN 295. Independent Study 1-3 sem. hrs.
Offered every term. *Prereq: Cons. of instr and cons. of dept. ch.***CEEN 296. Graduate Seminar 1 sem. hr.**
Review of current literature. Group discussion of recent work and current research by students and staff. Offered occasionally.**CEEN 298. Topics in Civil Engineering**
3 sem. hrs.

Course content announced each term. Areas of topics may include structural optimization, design of structures for random loads, transportation systems analysis and design, water and wastewater systems analysis and design, and soil-structure interaction. Offered occasionally.

CEEN 299. Master's Thesis 1-6 sem. hrs.
Offered every term. *Prereq: Cons. of dept. ch.***CEEN 396. Seminar**
0-3 sem. hrs.**CEEN 399. Doctoral Dissertation**
1-12 sem. hrs.
Offered every term. *Prereq: Cons. of dept. ch.***CEEN 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.**
Fee. S/U grade assessment.
*Prereq: Cons. of dept. ch.***CEEN 892. Continuous Enrollment — Half-Time 0 sem. hrs.**
Fee. S/U grade assessment.
*Prereq: Cons. of dept. ch.***CEEN 893. Continuous Enrollment — Full-Time 0 sem. hrs.**
Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

CLINICAL PSYCHOLOGY (CLPS)

See **PSYCHOLOGY, CLINICAL**

COMMUNICATION (COMM)

Interim Dean and Associate Professor: Garner
Associate Dean and Associate Professor: Meyer

Associate Dean for Graduate Studies & Research and Associate Professor of Journalism: Wolburg
Assistant Dean: Richard
Chair of Advertising and Public Relations and Associate Professor of Advertising: Pokrywczynski
Chair and Associate Professor of Broadcast and Electronic Communication: Porter
Chair and Professor of Communication Studies: Shuter

Chair of Journalism and Associate Professor: Ksobiech
Professor: Badaracco, Goldzwig, Griffin, Helbert (*Emeritus*), Seib (*Lucius W. Nieman Chair*), Shuter, Soley (*Cyril & Gretchen Colnik Chair*), L. Staudacher (*Emeritus*), Turner
Associate Professor: Ekachai, Grams, Havice, Ksobiech, Meyer, Pokrywczynski, Porter, Price (*Emeritus*), Scotton, Slattery, Thorn
Assistant Professor: D'Urso, Feldner, Grow, Ravel, Ugland, Webb
Adjunct Associate Professor: Krajec
Adjunct Assistant Professor: Campbell, Garinger, Hudson-Maire, Loeffler-Bell
Visiting Assistant Professor: Juranek
Lecturer: Byers, Volbrecht
Professional in Residence: Menck
Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREES OFFERED

Master of Arts; Certificate

SPECIALIZATIONS

Master's: Advertising and Public Relations; Broadcast and Electronic Communication; Communication Studies; Journalism; Mass Communication; Religious Communication; Science, Health and Environmental Communication

Certificate: Professional Communication

PROGRAM DESCRIPTION

The J. William and Mary Diederich College of Communication graduate program prepares students for intellectual, artistic, professional and ethical leadership in a complex technological and multicultural world. It uses a core of common knowledge, values, and communication skills to improve understanding of communication as a cultural and social process and to develop the skills necessary for success in constantly changing information environments. Graduate students are partners in the production of knowledge and are actively involved in systematic research and professional development which enables them to develop a mastery of the intellectual and professional content of the discipline. All students complete a core curriculum and develop a specialization in areas such as: advertising and public relations; broadcast and electronic communication; communication studies; journalism; mass communication; religious communication; and science, health and environmental communication.

The program offers an interdisciplinary bridge between courses in a variety of areas

and individual interests and goals. For example, students might wish to develop emphasis in such areas as health communication or visual communication. Faculty advisers assist students in course planning and approve the final programs of study which are custom-tailored to meet individual needs. Advisers help students develop programs that can include supplements from allied areas such as health care, business, marketing, English, psychology, sociology, and political science.

The program can be tailored for students who have undergraduate training in their field of choice, who are working as practitioners, who are considering a career change, as well as those who wish to teach or conduct research.

The program prepares students to work in a variety of settings from education to industry. Students study and work in an urban laboratory with a wide array of advertising, publications, and communications consulting firms, network television stations, leading radio stations, and one of the world's most respected newspapers. Marquette alumni work in many of these organizations, which offers enriching opportunities for graduate students.

Core courses broaden knowledge about current communication theory and professional and research practices. Other courses examine social issues, help prepare students for industry leadership, and sharpen the students' professional skills.

Upon the completion of the master of arts degree program in communication, graduates will be able to:

1. Articulate the historical, theoretical and methodological foundations of the discipline of communication.
2. Apply research-based, theory-informed knowledge to the identification and solution of real-life issues in the field.
3. Apply ethical decision-making skills in a variety of communication situations.
4. Integrate knowledge from theory, methods, and ethics from the discipline of communications to a particular specialization area (advertising and public relations; broadcast and electronic communication; communication studies; journalism; mass communication; religious communication; science, health, and environmental communication).

PREREQUISITES FOR ADMISSION

For all master of arts specializations in communication and the certificate in professional communication, the applicant should have graduated with, or be about to graduate with, a bachelor's degree from an accredited institution and must have an undergraduate grade point average equivalent of at least a 3.00 on a 4.00 scale. Master of arts applicants without sufficient academic or professional background may be required to take some undergraduate courses with no graduate credit to satisfy deficiencies.

APPLICATION REQUIREMENTS

Applicants to all specializations and the certificate in professional communication must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.

3. Three letters of recommendation.
4. *(For M.A. applicants only)* a 300-word statement of academic and professional goals.
5. *(For M.A. applicants only)* GRE scores (General Test only). Minimum GRE scores are as follows: verbal 450, quantitative 450, and analytical 4.5; however, verbal plus quantitative scores must be at least 1,000.
6. *(For international applicants only)* a TOEFL score or other acceptable proof of English proficiency. A minimum score of 600 on the paper-based version or 250 on the computer-based version is required. Minimum scoring for the new Internet-based version is still being established for this program.

GENERAL INFORMATION

All papers and oral presentations produced by students in all classes are expected to conform to professional standards of lucidity, coherence, grammar, and syntax. All instructors in all classes in communication will consider the factors listed above, as well as substance, in grading written and oral presentations. Integrity is essential to any communication professional and is expected of students in communication. The worst offenses are plagiarism, unapproved collaboration, or falsifying work in whole or in part. The minimum penalty for academic dishonesty is a grade of F in the course.

JOINT PROGRAM OF STUDY

M.A. IN COMMUNICATION AND IN POLITICAL SCIENCE

The J. William and Mary Diederich College of Communication, in conjunction with the Department of Political Science, offers a program of joint study leading to a master of arts degree in communication and a master of arts degree in political science. The program is designed for students whose interests overlap aspects of communication such as advertising, journalism, or broadcasting and politics. Joint degree students are able to complete both degree programs in less time than if both degrees were pursued separately.

Students seeking admission into the joint degree program must submit to the Graduate School separate applications for admission to both programs, including two sets of required documentation, and must meet the admission requirements of each program. Acceptance into one program does not guarantee acceptance into the other. If a student is accepted into one program and not the other, the student can still choose to accept the admission offer from the first program but would not be considered a joint degree student. Because students are officially admitted into only one Marquette University graduate program at a time, applicants must indicate which program they intend to pursue and complete first, although once accepted for admission to both programs, students may take courses from both departments. Upon completion of the first program, the student will be officially admitted to the second program for completion of the remainder of the joint program.

Joint degree students count 9 credits of course work in each program toward the required course work credits of the other program. Thus, 9 of the 30 credits required for the thesis track, or 9 of the 36 credits required for the non-thesis track for the master of arts

degree in communication will come from POSC courses, and 9 of the 30 credits required for the master of arts degree in political science will come from COMM courses.

MASTER'S REQUIREMENTS

In addition to the credit requirements for Plan A (thesis track, 30 credits) or Plan B (non-thesis track, 36 credits), all students must satisfactorily pass a comprehensive examination. At least 50% of the credits must be at the 200-level or above.

THESIS TRACK (PLAN A)

Students must complete 24 credit hours of course work and 6 credit hours of thesis work (a total of 30 credit hours), pass a comprehensive examination, and submit an approved thesis. In addition to the college core, the student must complete an additional 15 credits (including thesis credits) approved by the program. Students are required to orally defend their theses.

NON-THESIS TRACK (PLAN B)

All students are admitted to the program in Plan A (thesis) but may transfer to Plan B (non-thesis) with approval of the Graduate School and the program.

Non-thesis students must complete 36 credit hours of course work and pass a comprehensive examination. To meet the 36 credit hour requirement, students must complete 21 credits of course work (in addition to the core) approved by the college. A professional project of 3 credit hours (COMM 289) can fulfill 3 of the 21 hours for some specializations. Note: Course option is not available for all specializations. Written application for the course option is required.

COMPREHENSIVE EXAMINATION

All students are required to pass a comprehensive examination which tests their abilities to integrate theory and research methods in subject areas within their specializations. The exam normally is taken during the student's final term and cannot be scheduled until the student has completed COMM 200 and 201.

REQUIRED CORE COURSES

All Plan A and Plan B students are required to take the following college core courses (15 credits total) in addition to those required for their areas of specialization.

COMM 200 Theories of Communication
 COMM 201 Research Methods in Communication
 COMM 206 Ethics in Communication

and at least one of the following:

COMM 202 Qualitative Research Methods in Communication

or

COMM 203 Quantitative Research Methods in Communication

and at least one additional course from: COMM 202–215.

Students without sufficient academic or professional background will be required to take some undergraduate courses for no graduate credit to satisfy deficiencies.

PROGRAM DETAILS

Upon admission to the graduate program, students are assigned faculty advisers to work with throughout their time at Marquette. Students work with their advisers to select courses that will meet their needs. Some areas of specialization require specific courses in addition to the core courses. Students must earn a grade point average of at least 3.00 with no grades below a C.

The specializations are described below along with any required course work.

ADVERTISING AND PUBLIC RELATIONS

Advertising and public relations is designed for those who wish to learn theory, research and professional skills needed to succeed in the new world of marketing communications. Students may study in areas such as advertising and public relations or to focus in either field. ADPR 240, ADPR 241 and ADPR 242 are required.

BROADCAST AND ELECTRONIC COMMUNICATION

This specialization is designed to provide students with the knowledge and skills necessary for the creative extension and application of theory to the development and utilization of audio and video messages in a variety of settings, particularly news and entertainment. Students may study in areas such as broadcast communication or broadcast journalism. Broadcast journalism is offered in conjunction with journalism.

COMMUNICATION STUDIES

Communication studies is designed for those interested in applying theory and research in the analysis of a variety of messages from diverse sources including organizations, families, media and political leaders, enabling graduates to work in a variety of careers from education to industry. Students must complete at least three of the following: COMM 207, COMM 208, CMST 257, CMST 258, or CMST 262.

JOURNALISM

The journalism specialization is designed to provide students with the theory, research and professional skills needed for the many varieties and media of journalism in the information age. Students may study in areas such as journalism, broadcast journalism or public affairs. Broadcast journalism is offered in conjunction with the broadcast and electronic communication academic area. Students with Plan B (non-thesis) emphasis must complete COMM 240, JOUR 241 and JOUR 242. Recommended electives are: COMM 209 (preferred), 210, 211, 213 and 215.

MASS COMMUNICATION

This interdisciplinary specialization is designed to provide students with both the theoretical background to understand mass communication phenomena and the specialized knowledge and skills necessary for professional work in a variety of mass communication fields. This program is particularly suited to students preparing for doctoral studies or planning a career in mass media research.

RELIGIOUS COMMUNICATION

This interdisciplinary specialization is designed for those who wish to work in communication roles for dioceses, religious communities, and other institutions. The program provides students with theory, research and professional skills needed for media production and management within a religious communication context. Students may study in the areas of advertising and public relations, broadcast and electronic communication or journalism. JOUR 212 is required.

SCIENCE, HEALTH AND ENVIRONMENTAL COMMUNICATION

This interdisciplinary specialization provides students with the theory, research and fundamental professional knowledge needed (1) to understand the processes, roles and effects of communicating about science, health and environment interpersonally, in organizations and in society, and (2) to apply this understanding to the task of communicating technical, specialized information to a variety of audiences, especially non-expert, lay audiences.

In addition to the required core courses (15 credits), students following the Plan A master's thesis track must complete a total of 30 credits: JOUR 173 (3 credits), the master's thesis (6 credits), and additional course work (CMST 146 is recommended) from relevant college and university courses that complement this specialization (6 credits).

Students following the Plan B non-thesis track must complete a total of 36 credits: the required core courses (15 credits), JOUR 173 (3 credits), the professional project related to this specialization (3 credits), and additional course work (CMST 146 is recommended) from relevant college and university courses that complement this specialization (15 credits).

CERTIFICATE IN PROFESSIONAL COMMUNICATION

In addition to its master's program, the J. William and Mary Diederich College of Communication also offers a non-degree, graduate certificate program in professional communication. This program provides an add-on certificate for bachelor's and graduate degree holders in fields outside of communication. It is intended to enable its holders to demonstrate to employers that they can use their communication skills to solve professional communication challenges involving Web-based communication, multimedia, manuals, proposals, research summaries, technical reports, evaluations, and so on. The certificate is designed so students may apply certificate courses towards a master's degree in communication.

CERTIFICATE REQUIREMENTS

The certificate in professional communication requires the completion of five courses for a total of 15 credits: two theory courses (6 credits), two professional skills courses (6 credits), plus a capstone course (3 credits). Students select specific courses in consultation with the associate dean of graduate studies and research in the Diederich College of Communication in order to best meet their needs and career goals. Students submit their plan of study, which must be approved by the associate dean.

Theory Courses

Students must choose two courses from the following list of theory courses: COMM 200, COMM 206, COMM 208 *or* CMST 262, COMM 213, COMM 214. These courses provide students with an understanding of the ethical, psychological, sociological, organizational and/or persuasive aspects of various communication strategies and enable them to analyze a communication challenge in light of audience needs, allowing them to write outside of their discipline.

Professional Courses

Students must also choose two professional courses from the following list, which provide them with the professional skills needed to write and present information to the intended audience: ADPR 143, ADPR 148, ADPR 149, ADPR 151, ADPR 240, BREC 265, CMST 141 *or* CMST 142, COMM 204, COMM 205, COMM 240, JOUR 151, JOUR 152, JOUR 173, JOUR 174.

Capstone Course

Students must also complete the capstone course COMM 294. To complete their certificate, students will develop a professional communication project that will allow them to integrate learning from the theoretical and professional skills courses taken. This project culminates in a final paper, and normally will be supervised by two faculty members—one from the College of Communication and one additional member appropriate to their field. This project will be completed as part of COMM 294.

COURSE DESCRIPTIONS

Following is a listing of all J. William and Mary Diederich College of Communication courses followed by area specialization courses.

Communication (COMM)

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

COMM 160. Mass Media and the American Family 3 sem. hrs.

COMM 162. International Communication 3 sem. hrs.

COMM 164. Introduction to Survey Research in the Communications Media 3 sem. hrs.

COMM 167. Race and Gender Issues in Mass Media 3 sem. hrs.

COMM 177. Media Management 3 sem. hrs.

COMM 181. Media and Politics 3 sem. hrs.

COMM 196. Seminar in Communication 1-3 sem. hrs.

GRADUATE COURSES:

COMM 200. Theories of Communication 3 sem. hrs.
Introduction to the theories used to understand the communication process. Students will learn to recognize, analyze and apply theory to communication-related problems or settings. Offered fall term.

communication-related problems or settings. Offered fall term.

COMM 201. Research Methods in Communication 3 sem. hrs.

Introduction to the characteristics of qualitative and quantitative methods used by professionals and scholars in communication. Students will learn to identify and analyze communication-related problems and derive research questions and appropriate methods. Offered spring term. *Prereq:* COMM 200.

COMM 202. Qualitative Research Methods in Communication 3 sem. hrs.

Study of theory-based qualitative research applied to professional and scholarly problems and the effective communication of research results. Based on the fundamentals of theory and research methods offered in COMM 200 and COMM 201. Offered fall term. *Prereq:* COMM 200 or equiv. and COMM 201 or equiv.; or cons. of instr.

COMM 203. Quantitative Research Methods in Communication 3 sem. hrs.

Study of theory-based quantitative research applied to professional and scholarly problems and the effective communication of research results. Based on the fundamentals of theory and research methods offered in COMM 200 and COMM 201. Offered fall term. *Prereq:* COMM 200 or equiv. and COMM 201 or equiv.; or cons. of instr.

COMM 204. International Communication 3 sem. hrs.

Development of international communication systems; flow of information, including news, entertainment and advertising. Influence of media systems upon international relations and national development. Comparison of media systems. Offered once every three years.

COMM 205. Communication Analysis and Design 3 sem. hrs.

Study of human and mass communication content, audience analysis, public opinion formation, effects, message design and related topics. Advanced quantitative analysis. Offered once every three years. *Prereq:* COMM 200 and COMM 201; or cons. of instr.

COMM 206. Ethics in Communication 3 sem. hrs.

Explores the role of ethics in professional and scholarly life. Students will learn ethical theories, how to analyze a communication related ethics problem, derive and answer a normative-question related to the problem and learn to critically analyze and evaluate texts from a variety of communicative settings. Offered spring term. *Prereq:* COMM 200 and COMM 201; or cons. of instr.

COMM 207. Intercultural Communication 3 sem. hrs.

Examines the influence of culture on communication in international transactions and cross-cultural encounters within the United States. Explains the dynamics of intercultural communication between people from different societies as well as the interpersonal patterns of selected ethnic groups and races within the United States. Provides an analytical framework for analyzing intercultural exchanges. Offered once every three years.

COMM 208. Theories of Persuasion

3 sem. hrs.

Identification and examination of the role and influence of communication variables central to the process of persuasion in human and mass communication. Offered once every three years.

COMM 209. Media Law 3 sem. hrs.

Constitutional and administrative law principles affecting freedom of expression and mass communication. Laws and regulations which pertain to media management and business practices explicitly and exclusively applied to mass communication. May be taken in place of JOUR 203. Offered once every three years.

COMM 210. Communication History

3 sem. hrs.

Analysis of the origins and development of human and mass communication. Social, technological, political and economic influences of the growth and development of communication. Offered once every three years.

COMM 211. Media Economics and Management 3 sem. hrs.

Examines problems and issues in media economics and management. Emphasis on finance, personnel, advertising, audience promotion and research. Offered once every three years.

COMM 213. Sociology of Communication

3 sem. hrs.

The nature and function of human and mass communication as a function of sociological concepts. The role of social institutions and systems in forming the human response to communication. Offered once every three years.

COMM 214. Psychology of Communication

3 sem. hrs.

The nature and function of human and mass communication as a function of psychological concepts. Perception, cognition, comprehension, dynamics, semantics and symbols as related to human response. Offered once every three years.

COMM 215. Media and the Information Society 3 sem. hrs.

Media as cultural forces associated with the diffusion of technological development and their economic, political and social consequences. Offered once every three years.

COMM 240. Proseminar & Multimedia Technology 3 sem. hrs.

Consists of a proseminar which requires students to read and respond to texts on program recommended reading list and hands on training in all aspects of media editing and production (e.g. print and Web page construction, audio production, video production). Offered every fall term.

COMM 268. Independent Projects in Communication 1-3 sem. hrs.

Graduate student projects in applied and production areas under the supervision of a full-time faculty member. Offered every term. *Prereq: Cons. of the associate dean for graduate studies.*

COMM 289. Professional Project

1-3 sem. hrs.

Offered every term. *Prereq: Cons. of dept. ch., approved project proposal, and cons. of the associate dean for graduate studies.*

COMM 294. Special**Institute/Workshop/Project** 1-3 sem. hrs.**COMM 295. Independent Study** 1-3 sem. hrs.

Offered every term. *Prereq: Cons. of dept. ch.; cons. of the associate dean for graduate studies.*

COMM 296. Special Topics in**Communication** 3 sem. hrs.

Directed individual/group investigation of a selected topic or problem in communication. May be taken more than once when topics vary. Offered occasionally. *Prereq: COMM 200 and COMM 201; cons. of the associate dean for graduate studies.*

COMM 299. Master's Thesis 1-6 sem. hrs.

Offered every term. *Prereq: Cons. of dept. ch.; approved thesis outline and cons. of the associate dean for graduate studies.*

COMM 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.; cons. of associate dean for graduate studies.*

COMM 892. Continuous Enrollment — Half-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.; cons. of associate dean for graduate studies.*

COMM 893. Continuous Enrollment — Full-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.; cons. of associate dean for graduate studies.*

Advertising and Public Relations (ADPR)

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

ADPR 142. Strategic Research for Advertising and Public Relations 3 sem. hrs.

ADPR 143. Marketing Communications Design and Production 3 sem. hrs.

ADPR 144. Advertising Copywriting 3 sem. hrs.

ADPR 145. Advertising Media 3 sem. hrs.

ADPR 147. Advanced Advertising Copywriting 3 sem. hrs.

ADPR 148. Advertising and Public Relations Account Management 3 sem. hrs.

ADPR 149. Business to Business Marketing Communications 3 sem. hrs.

ADPR 150. Advertising, Public Relations and the Internet 3 sem. hrs.

ADPR 151. Multicultural and International Advertising and Public Relations 3 sem. hrs.

ADPR 181. Writing for the Marketplace: Public Relations and Business 3 sem. hrs.

ADPR 185. Cultural Identity, Media and World Religions 3 sem. hrs.

ADPR 196. Seminar in Advertising and Public Relations 1-3 sem. hrs.

GRADUATE COURSES:

ADPR 240. Advertising and Public Relations Management 3 sem. hrs.

Intensive analysis of advertising and public relations theory and the factors affecting their management. Study of issues and situations in advertising and public relations decision-making, such as defining objectives, planning and strategy, budgeting, media selection, and agency/client relations. Offered fall term. *Prereq: ADPR 180; or ADPR 140; or cons. of dept. ch.*

ADPR 241. Advertising and Public Relations in Society 3 sem. hrs.

Study of the origin and development of advertising and public relations. Analysis of their social, economic, and political influences. Special attention given to ethical issues. Offered spring term.

ADPR 242. Integrated Marketing Communication Campaigns: Merging Theory with Practice 3 sem. hrs.

Clarifies the fundamentals of integrating advertising and public relations into a marketing communications program. Integrates professional skills with theory through readings, professional speakers and the completion of an integrated marketing communications plan for a real client. Offered every spring term. *Prereq: ADPR 240 and ADPR 241.*

ADPR 296. Special Topics in Advertising and Public Relations 3 sem. hrs.

Directed individual/group investigation of a selected topic or problem in advertising and/or public relations. May be taken more than once when topics vary. Offered occasionally. *Prereq: COMM 200 and COMM 201; approval of the associate dean for graduate studies.*

Broadcast and Electronic Communication (BREC)

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

BREC 135. Advanced Scriptwriting 3 sem. hrs.

BREC 146. Television Reporting 3 sem. hrs.

BREC 147. News and Information Gathering 3 sem. hrs.

BREC 164. Television Criticism 3 sem. hrs.

BREC 170. Radio Programming 3 sem. hrs.

BREC 171. Television Programming 3 sem. hrs.

BREC 183. Early History of Broadcasting
3 sem. hrs.

**BREC 184. American Television:
1946-Present** 3 sem. hrs.

**BREC 186. Communication and Social
Issues of the Internet** 3 sem. hrs.

**BREC 197. Topics in Broadcast and
Electronic Communication** 1-3 sem. hrs.

GRADUATE COURSES:

**BREC 260. Telecommunications and
Public Policy** 3 sem. hrs.

Analysis of the public policy process and its impact on the development of telecommunication systems. Examination of current policy issues relating to content, structure, economics, and technological change. Offered once every three years.

**BREC 263. Seminar in Broadcast and
Electronic Communication**
3 sem. hrs.

Directed individual/group investigation of a selected topic or problem in broadcast communication. May be taken more than once when topics vary. Offered occasionally.

**BREC 264. Special Topics in Broadcast and
Electronic Communication** 1-3 sem. hrs.
Topics of current interest in broadcast and electronic communication. May be taken more than once when topics vary. Offered occasionally.
Prereq: Enrolled in Graduate School.

BREC 265. Multimedia Communication
3 sem. hrs.

Surveys the technology, role and management of electronic media in education, business and industry. Emphasizes design and evaluation of purposive communication through electronic media. Offered once every three years.

**BREC 268. Independent Projects in
Broadcast and Electronic
Communication** 1-3 sem. hrs.

Student projects in designated areas of special interest. Offered every term. *Prereq: Cons. of dept. ch.; cons. of the associate dean for graduate studies.*

Communication Studies (CMST)

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

**CMST 121. Principles and Methods of
Teaching Speech Communication**
3 sem. hrs.

CMST 124. Directing Speech Activities
3 sem. hrs.

CMST 132. Organizational Communication
3 sem. hrs.

CMST 133. Group Dynamics 3 sem. hrs.

CMST 134. Communication and Conflict
3 sem. hrs.

**CMST 135. Communication Approaches to
Training and Development** 3 sem. hrs.

CMST 136. Managerial Communication
3 sem. hrs.

CMST 137. Gender and Communication
3 sem. hrs.

CMST 140. Intercultural Communication
3 sem. hrs.

**CMST 141. Cross-Cultural Communication
in the United States** 3 sem. hrs.

**CMST 142. Communicating in Multinational
Organizations** 3 sem. hrs.

CMST 144. Leadership and Communication
3 sem. hrs.

CMST 145. Family Communication
3 sem. hrs.

CMST 146. Health Communication
3 sem. hrs.

**CMST 147. New Communication
Technologies in the Workplace**
3 sem. hrs.

CMST 150. Philosophy of Communication
3 sem. hrs.

CMST 156. Classical Rhetorical Theory
3 sem. hrs.

**CMST 157. Modern Rhetorical Theory and
Criticism** 3 sem. hrs.

CMST 160. Rhetoric of Social Movements
3 sem. hrs.

CMST 166. Freedom of Speech
3 sem. hrs.

**CMST 170. Communication and Urban
Families** 3 sem. hrs.

**CMST 196. Seminar in Communication
Studies** 1-3 sem. hrs.

GRADUATE COURSES:

**CMST 257. Seminar in Interpersonal
Communication** 3 sem. hrs.

Explores new directions in research in interpersonal communication. Focuses on communication in the following relationships: friendships, dating, and marriage. Emphasizes the theoretical perspectives and the methodological approaches that enable us to understand how communication processes and relationship development inform each other. Offered once every three years.

CMST 258. Seminar in Rhetorical Criticism
3 sem. hrs.

Explores principles and methods of contemporary rhetorical criticism. Offered once every three years.

**CMST 262. Seminar in Organizational
Communication** 3 sem. hrs.

Explores historical, contemporary and ideological approaches to the study and practice of organizational communication. Topics include: organizational culture, workplace relationships, participation and decision making, organizational change, organizational justice, and organizational communication consulting. Offered once every three years.

**CMST 296. Special Topics in
Communication Studies** 3 sem. hrs.

Directed individual/group investigation of a selected topic or problem in communication and rhetorical studies. May be taken more than once when topics vary. Offered occasionally.
Prereq: COMM 200 and COMM 201; approval of the associate dean for graduate studies.

Film (FILM)

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

With approval of the adviser, one or more of the following film courses may be taken for graduate credit.

FILM 110. History of Film
3 sem. hrs.

FILM 111. Issues in Film Studies
3 sem. hrs.

FILM 115. Film as Communication
3 sem. hrs.

FILM 116. Film as Art
3 sem. hrs.

FILM 117. Film and Popular Culture
3 sem. hrs.

FILM 166. The Documentary
3 sem. hrs.

FILM 196. Seminar in Film
1-3 sem. hrs.

Journalism (JOUR)

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

JOUR 100. Publications Editing
3 sem. hrs.

JOUR 110. Persuasive Writing
3 sem. hrs.

JOUR 111. Article Writing
3 sem. hrs.

JOUR 112. Critical Writing
3 sem. hrs.

JOUR 120. Photojournalism
3 sem. hrs.

**JOUR 150. Newspaper Design and
Production**
3 sem. hrs.

JOUR 151. Magazine Design and Production
3 sem. hrs.

JOUR 152. Online Editing and Design
3 sem. hrs.

JOUR 163. History of American News Media
3 sem. hrs.

JOUR 171. Communication of Urban Issues
3 sem. hrs.

JOUR 172. Religious Journalism
3 sem. hrs.

JOUR 173. Health, Science and Environmental Communication
3 sem. hrs.

JOUR 174. Business and Economic Journalism 3 sem. hrs.

JOUR 175. Public Affairs Reporting
3 sem. hrs.

JOUR 177. Computer-Assisted Reporting
3 sem. hrs.

JOUR 182. News Media and Foreign Policy
3 sem. hrs.

JOUR 185. School Publications
3 sem. hrs.

JOUR 196. Seminar in Journalism
1-3 sem. hrs.

GRADUATE COURSES:

JOUR 202. Seminar in Media History
3 sem. hrs.

Historical methods for analyzing the origins and development of the American media. Social, technological, political, and economic influences on the development of the media and the practice of journalism. Offered once every three years.

JOUR 203. Seminar in Media Law 3 sem. hrs.
Constitutional and administrative law principles affecting freedom of expression and mass communication. Laws and regulations which pertain to media management and business practices as explicitly and exclusively applied to mass communication. COMM 209 may be substituted for JOUR 203. Offered once every three years.

JOUR 205. Seminar on Mass Media in Contemporary Society 3 sem. hrs.
Advanced study of issues and problems in the major media as social forces. Cultural origins and influence on culture. Responsibility, media organization, influence on social process. Media as a social institution. Offered once every three years.

JOUR 206. Journalism as Literature
3 sem. hrs.
Study of major British and American literary works which have been produced by journalists. Contribution of journalists to literary developments in U.S. and Britain. Offered once every three years.

JOUR 212. Religious Communication
3 sem. hrs.
Relationship between mass mediated religious content and audience; methods for developing communication within religious institutions and communities and between religious institutions and society; small group, print, electronic, and public information systems; structure of church communication systems at local, regional, and national levels. Communication of religious concepts through media to different audiences and age groups. Offered once every three years.

JOUR 213. Political Analysis 3 sem. hrs.
Principles which enable the observer and commentator to distinguish between public debate and underlying trends and to identify issues moving society as opposed to those that are only being discussed. Analysis of levels of polit-

ical activity, federal, state, and local; effective patterns of relation between layers of government. Social forces which tend to convert political debate into ritual observances with no apparent connection to the forces moving the electorate. Offered once every three years.

JOUR 241. Specialized Reporting 3 sem. hrs.
Overview of various reporting areas (health/science/environment, business/economic, religion) with required application in each of the areas. Five weeks are devoted to each area. The end of each section requires a final news project. Students have the ability to work/write across media. Offered every spring term.
Prereq: COMM 240.

JOUR 242. Processes and Strategies in Public Affairs Reporting 3 sem. hrs.
Intensive application of the processes and strategies in public affairs reporting. Serves as a capstone course. Offered every fall term.
Prereq: JOUR 241.

JOUR 296. Special Topics in Journalism
1-3 sem. hrs.
Directed individual/group investigation of a selected topic or problem in journalism. May be taken more than once when topics vary. Offered occasionally.

Music (MUSI)

UPPER DIVISION COURSE THAT MAY CARRY GRADUATE CREDIT:

MUSI 152. History of the Musical in America
3 sem. hrs.

Theatre Arts (THAR)

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

THAR 120. Lighting Design
3 sem. hrs.

THAR 121. Crafts for the Theatre
3 sem. hrs.

THAR 122. Costume Design
3 sem. hrs.

THAR 123. History of Clothing 1
3 sem. hrs.

THAR 124. Advanced Costume Technique
3 sem. hrs.

THAR 125. History of Clothing 2
3 sem. hrs.

THAR 127. Scenery Design
3 sem. hrs.

THAR 128. Advanced Play Direction
3 sem. hrs.

THAR 129. Period Styles
3 sem. hrs.

THAR 140. Playwriting
3 sem. hrs.

THAR 150. History of Theatre
3 sem. hrs.

THAR 153. Contemporary Theatre
3 sem. hrs.

THAR 160. Theatre Management
2 sem. hrs.

COMPUTING (COMP)

Program Director and Professor: Harris
Professor: Bankston, Corliss, Hock, Karshenas, Krenz
Associate Professor: J. Factor, Feng, Riedel, Simms, Slattery
Assistant Professor: Ahamed, Brylow, K. Factor, Johnson, Madiraju, Povinelli, Struble
Note: Faculty members and their ranks are for the 2005-2006 academic year.

DEGREE OFFERED

Master of Science, students are admitted under Plan B (non-thesis option) but Plan A (thesis option) is also offered

PROGRAM DESCRIPTION

The program is designed to meet the educational needs of present and future computing professionals interested in starting a career or updating their skills in areas such as systems analysis, software engineering, database design and administration, network design and administration, systems engineering, and technical support. Students may select courses (including some designated as EECE, MSCS, CSEN, COEN and COSC) from a large number of approved courses offered by the Department of Electrical and Computer Engineering, the Department of Mathematics, Statistics and Computer Science and other units on campus. Students may pursue the degree on a full time or part time basis. Many courses are offered evenings.

PREREQUISITES FOR ADMISSION

Applicants must have completed or be in the process of completing a bachelor's degree from an accredited college or university. Applicants should also have taken at least two terms of computer programming courses in a modern computer programming language with a knowledge of data structures (or equivalent work experience).

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Essay outlining relevant work experience or education, career goals, possible areas of interest, and reasons for seeking admission to this program.
4. Three letters of reference from professors or professionals familiar with the applicant's abilities, academic work, and/or professional background.
5. (*For international applicants only*) a TOEFL score (minimum 600 on the paper-based version, 250 on the computer-based version, 100 on the new Internet-based version including Speaking, or 75 on the new Internet-based version not including

Speaking) or other acceptable proof of English proficiency and a recent GRE score are strongly recommended.

GENERAL INFORMATION

Students interested in applying to the program should consult the program Web site www.comp.mu.edu for a list of the currently approved courses for the degree and scheduled course offerings for the next term.

MASTER'S REQUIREMENTS

Students are admitted to the program under Plan B (non-thesis option), and most students graduate under this plan. Students may transfer to Plan A (thesis option) on approval of a thesis outline by their adviser and the Computing Graduate Committee. The course of study is very flexible. Students complete a breadth requirement, primary and secondary concentrations, and additional courses suited to their backgrounds and career goals. The program director and faculty advisers work very closely with students to ensure that they achieve their educational goals through appropriate course selection.

BREADTH REQUIREMENT (12 CREDITS)

Computing students experience the breadth of the field. Students complete (or have completed before entering the program) at least three credits in four of the following five areas:

1. Information Management: COSC 153 or COEN 150
2. Architecture and Organization: COEN 171, COEN 173, or have completed COSC 65 before beginning the program
3. Operating Systems: COSC 125 or COEN 183
4. Programming Concepts and Skills: COSC 152 or COEN 190
5. Software Engineering: COSC 158 or COEN 181

More advanced 200-level classes designated by the program in each area also satisfy the breadth requirement.

CONCENTRATIONS (18 CREDITS)

Computing students gain both breadth and an in-depth knowledge of their field. Concentrations provide in-depth knowledge areas and often reflect possible long-term career objectives. Each student must have one primary concentration of at least 12 credits, and one different secondary concentration of at least six credits. For students in Plan A (thesis option), the six thesis credits are considered a secondary concentration.

Courses taken to satisfy the breadth requirement also count toward primary and secondary concentrations. No course may be counted toward satisfying both a primary and a secondary concentration. The breadth and concentration requirements may be satisfied with any combination of approved 100- and 200-level classes, subject to the overall Plan A or Plan B requirements for 200-level credits. Primary or secondary concentrations include:

- Foundations of Computation
- Distributed Computing
- Software Engineering, Programming Concepts and Skills
- Intelligent Systems and Information Management

- Architecture and Organization.

Specific courses in each concentration are designated by the computing program.

ADDITIONAL COURSE WORK

Courses beyond the breadth and concentration requirements are taken from a list of computer science and computer engineering courses approved by the computing program. Six out-of-program elective credits may be selected from other Marquette graduate courses germane to computing or its applications.

Plan B Option (36 credits)

Students must complete 36 credit hours of course work, of which at least 18 hours must be earned in graduate-level courses (200-level and above).

Plan A Option (30 credits)

Students must complete 24 credit hours of course work, of which at least 12 hours must be earned in graduate level courses (200-level and above). Students must also complete a master's thesis for 6 credit hours and pass a comprehensive oral examination concentrated on the thesis. The six thesis credits are considered a secondary concentration.

COUNSELING (COUN) See COUNSELING AND EDUCATIONAL PSYCHOLOGY (COEP)

COUNSELING AND EDUCATIONAL PSYCHOLOGY (COEP)

Director of Graduate Studies and Associate Professor: Campbell

Professor: R. Fox, Ivanoff (*Emeritus*), Nordberg (*Emeritus*)

Associate Professor: Bardwell, Knox, Melchert, Taft

Assistant Professor: Burkard, Edwards

Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREES OFFERED

Master of Arts, Plan A (thesis option) or Plan B (non-thesis option); Doctor of Philosophy

PROGRAM DESCRIPTIONS

The Department of Counseling and Educational Psychology offers master's degree programs in counseling and educational psychology and a doctoral degree program in counseling psychology.

COUNSELING

Our master's in counseling program includes a variety of courses, practicum, and other training experiences which offer comprehensive preparation for professional practice as a counselor or therapist. Course work focuses on human development, psychopathology, psychological research, and ethical and legal issues as well as individual, group, and other counseling interventions. Training in counseling skills begins right in the first semester, and formalized practicum usually begins in the second

year. Specializations are offered in community counseling (including emphases in child and adolescent or substance abuse counseling) or school counseling.

COUNSELING PSYCHOLOGY

Our doctoral program in counseling psychology is based on a scientist-practitioner model for training professional psychologists, and is fully accredited by the American Psychological Association. Students acquire a solid foundation of knowledge in the biological, cognitive, affective, individual, and social bases of human behavior. Through course work in research design, measurement, and statistics, students develop the skills needed to critically evaluate psychological research and to conduct their own independent research. Training in diagnosis, assessment, psychotherapy, consultation, practice, internship, and ethics provides students with the necessary professional skills to practice as competent and ethical counseling psychologists. Supervised practica and internship experiences are available through the university's Counseling Center and at a wide variety of community sites. Graduates are prepared to practice as psychologists, professors, consultants, administrators, and researchers.

EDUCATIONAL PSYCHOLOGY

The objectives of the master's program in educational psychology are to provide knowledge and skills in the principal content areas of basic and applied psychology as required for the preparation of researchers and consultants for work in diverse settings, such as private and public schools, colleges and universities, research centers, and business and industry.

PREREQUISITES FOR ADMISSION

Applicants to all graduate programs in the Department of Counseling and Educational Psychology should have graduated with, or be about to graduate with, a bachelor's or a master's degree from an accredited institution appropriate to their chosen field of graduate study. Students applying to a doctoral program without a master's degree must complete an appropriate master's degree as part of their doctoral program requirements.

APPLICATION DEADLINES

Students are admitted to the department in the spring term to begin their programs the following summer or fall. To be considered for admission, all application requirements must be completed and received in the Graduate School by the deadlines listed below:

- | | |
|------------|---|
| December 1 | For admission to doctoral program in counseling psychology. |
| January 1 | For admission to master's programs in counseling and in educational psychology. |

APPLICATION REQUIREMENTS

Applicants, regardless of program, must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation along with recommendation forms.

4. A statement of purpose.
5. A resume/vita.
6. GRE scores (General Test only).
7. (*For international applicants only*) a TOEFL score or other acceptable proof of English proficiency.

After all applications are reviewed, the highest ranking applicants will be contacted for an interview with the faculty. This is required for admission. International applicants residing in foreign countries and applicants with extenuating circumstances may conduct their interviews over the phone.

MASTER'S REQUIREMENTS

COUNSELING

The master of arts degree program in counseling is offered with specializations in community or school counseling. Both specializations require a minimum of 48 credit hours and successful completion of a comprehensive examination. They also include the following required core course work: COUN 216, 217, 218, 219, 220, 222, and 235; EDPS 261 and 266; COPS 268 and 283; and COUN 230 (for community counseling) or COPS 273 (for school counseling). As part of their course work, students also complete an internship in a clinical or educational setting. More detailed requirements for each of the specializations can be obtained from the department office. The master of arts degree can be completed under Plan A, which requires a thesis, or Plan B, which does not require a thesis.

EDUCATIONAL PSYCHOLOGY

The master of arts degree in educational psychology requires a minimum of 30 credit hours and successful completion of a comprehensive examination. The program requires 18 credits of core course work in human development; the theories, philosophies, and psychology of learning; intermediate-level statistics and research methods; and measurement. The remaining elective course work allows students to tailor their program to be consistent with a variety of educational and career goals. The master of arts degree can be completed under Plan A, which requires a thesis, or Plan B, which does not require a thesis.

DOCTORAL REQUIREMENTS

COUNSELING PSYCHOLOGY

The counseling psychology program consists of 30 credits of course work in psychological foundations, 46 credits of course work in the counseling psychology professional core, a minimum of 1800 hours of clinical practicum, a collaborative research project and a 12-credit dissertation, and an approved 2000-hour clinical internship. Specific course requirements can be obtained from the department office. Students who have completed relevant graduate course work prior to entry into the program may have some of their requirements waived if the previous course work is equivalent to the courses currently required by the program.

Students must also pass a qualifying examination which is taken near the end of their course work in the program. The first component of the exam involves developing a Portfolio which primarily assesses the development of clinical skills and professional dispositions. The second component is a written exam

which primarily assesses knowledge of the field of counseling psychology. Students must pass both components of the qualifying examination and have their dissertation proposals accepted before they can apply for an internship. To be advanced to candidacy, students must pass the doctoral qualifying examination, have their dissertation proposal accepted, and complete all program course work and the Graduate School's residency requirement.

COURSE DESCRIPTIONS

GRADUATE COURSES:

Counseling (COUN)

COUN 216. Introduction to Counseling

3 sem. hrs.

Introduction to the philosophical bases, history, and development of counseling as a profession. Includes basic skills training, counselor roles and functions in various settings, and current issues in counseling. Usually offered fall term.

Prereq: Cons. of dept. ch.; concurrent field experiences may be required.

COUN 217. Individual Counseling

3 sem. hrs.

Examines the theory and research on individual counseling and therapy. Also emphasizes skill development in the techniques and methods of counseling and psychotherapy. Usually offered spring term. *Prereq: COUN 216 and EDPS 266 and cons. of instr.; or COPS 316 and EDPS 266 and cons. of instr.; admission to degree program.*

COUN 218. Group Counseling

3 sem. hrs.

Purposes, functions, types, and principles of group counseling. Dynamics of group interaction. Leadership of groups. Understanding of and ability to engage in and evaluate small group processes and relationships. Students experience group processes and the therapeutic value of groups by participating as members of an in-class group. Usually offered fall term. *Prereq: COUN 216 and COUN 222; concurrent field experiences may be required.*

COUN 219. Career Development

3 sem. hrs.

Theoretical approaches of career counseling. Psychological and sociological factors in life-long career-vocational development. Components of career development process and programs. Uses of occupational and educational information. Usually offered summer session. *Prereq: COUN 216.*

COUN 220. Assessment in Counseling

3 sem. hrs.

Introduction to assessment for counselors. Provides knowledge needed to evaluate tests and other assessment data and interpret assessment reports. Develops skills for screening and evaluating counseling effectiveness. Includes discussion of legal and ethical issues. Usually offered fall term. *Prereq: COUN 216 and COUN 222 and EDPS 261.*

COUN 222. Theories of Counseling and Psychotherapy

3 sem. hrs.

Review and critical analysis of major theoretical systems of counseling and psychotherapy. Focus on comparative evaluation of theoretical

orientations as they apply to counseling. Usually offered spring term.

COUN 227. Counseling with Children and Adolescents

3 sem. hrs.

Developmental stages and tasks of children and adolescents; theories and techniques of developmental and remedial counseling with children and adolescents; warning signs, possible causes, and prevention and intervention strategies of behavior problems. Usually offered summer term. *Prereq: COUN 216 and COUN 217 and COUN 222.*

COUN 228. Developmental Guidance in Primary and Secondary Schools

3 sem. hrs.

Focuses on the principles and techniques of counseling and developmental guidance with children. Covers consultation with parents and school personnel, program planning and curriculum intervention, roles and functions of counselors and other school personnel, and contemporary school counseling issues. Usually offered spring term. *Prereq: COUN 216 and EDPS 266 and cons. of dept. ch.*

COUN 230. Psychopathology and Counseling Processes

3 sem. hrs.

Introduction to psychopathology and its treatment. Emphasis on the DSM diagnostic system and implications for treatment planning. Includes review of case studies. Usually offered spring term. *Prereq: COUN 216 and EDPS 266 and concurrent or previous enrollment in COUN 222.*

COUN 233. Introduction to Family Counseling

3 sem. hrs.

Introduction to theoretical approaches and methods of family counseling. Overview of the history and current issues in family counseling. Usually offered spring term. *Prereq: COUN 216; and concurrent or previous enrollment in COUN 222.*

COUN 235. Etiology and Treatment of Substance Abuse

3 sem. hrs.

Introduction to the prevention and treatment of substance abuse disorders. Emphasizes research supported prevention and intervention strategies, and counseling skills and approaches designed to meet individual client needs. Appropriate for students in behavioral health and related fields. Usually offered summer term.

COUN 269. Counseling Practicum

1-4 sem. hrs.

Supervised counseling experiences in assessment, diagnosis, intervention, prevention, and consultation. Students engage in their practicum activities at approved sites in the greater Milwaukee area and meet on campus weekly for a didactic seminar and group supervision. Attendance at the monthly departmental colloquium also required. Three credits of practicum requires a minimum of 300 clock hours of practicum activities. Offered fall, spring, and summer terms. S/U grade assessment. *Prereq: COPS 283 and COUN 216 and COUN 217 and COUN 222 and COUN 230 and EDPS 266 and cons. of dept. ch.; COUN 218 and 220 and COPS 268 must be taken prior to or concurrently with COUN 269; additional prerequisites may be required within each area of specialization.*

COUN 270. School Counseling Practicum
3 sem. hrs.

Supervised counseling experiences in elementary, middle, and/or high school guidance departments. Students engage in their practicum activities at approved sites in the greater Milwaukee area and meet on campus weekly for a didactic seminar and group supervision. Offered fall and spring terms. S/U grade assessment. *Prereq: COPS 273 and COPS 283 and COUN 216 and COUN 217 and COUN 222 and COUN 227 and COUN 228 and EDPS 266; and cons. of instr. COUN 218 and COUN 220 and COPS 268 must be taken prior to or concurrently with COUN 270.*

COUN 294. Institute 1-3 sem. hrs.

Topical institutes on various issues and problems in counseling. Scheduled according to need and demand. Offered occasionally.

COUN 296. Internship in Counseling
3-6 sem. hrs.

Supervised experiences in counseling. Internships must be planned with and approved by the director of training. Offered annually. S/U grade assessment. On program at Marquette. *Prereq: Cons. of dept. ch.; cons. of director of training.*

COUN 298. Special Topics in Counseling
2-3 sem. hrs.

In-depth study of theories and concepts in counseling which, because of their topicality, are not the subject of a regular course. The special topics will be designated in the *Schedule of Classes*. Offered occasionally. *Prereq: Cons. of instr.*

Counseling and Educational Psychology (COEP)

COEP 294. Independent Research 1 sem. hr. S/U grade assessment. Offered every term. *Prereq: Cons. of instr. and cons. of dept. ch.*

COEP 295. Independent Study 1-3 sem. hrs. Provides graduate students opportunities to investigate and study areas of interest through readings, research, field experience, projects, and/or other educational activities under the direction of a faculty adviser. Normally on advanced or specialized topics that are not covered by regularly offered courses. Offered occasionally. *Prereq: Cons. of instr. and cons. of dept. ch.*

COEP 299. Master's Thesis 1-6 sem. hrs. Master's thesis for M.A. candidates. Offered every term. *Prereq: Cons. of instr. and cons. of dept. ch.*

COEP 399. Doctoral Dissertation
1-12 sem. hrs.

Doctoral dissertation for Ph.D. candidates. Offered every term. *Prereq: Cons. of instr. and cons. of dept. ch.*

COEP 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.*

COEP 892. Continuous Enrollment — Half-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.*

COEP 893. Continuous Enrollment — Full-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.*

Counseling Psychology (COPS)

COPS 267. Behavior Therapy 3 sem. hrs. Learning theory applied in home, school, and other settings. Includes behavioral assessment (interviewing, checklists, observation) and intervention procedures (reinforcement, token economies), maintenance and generalization issues, single subject research design, self-control. Offered occasionally.

COPS 268. Multicultural Counseling
3 sem. hrs.

Explores the topic of cultural diversity. Sensitizes students to influence of culture on human behavior and its implications for professional practice as counselors and psychologists. Concurrent field experiences may be required. Usually offered every spring. *Prereq: COUN 216 and COUN 222.*

COPS 273. Behavior Disorders in Children and Youth 3 sem. hrs.

Advanced study of emotional, cognitive, behavioral, and social problems of childhood and adolescence. Major topics include: (a) nature, etiology, and incidence within a developmental/interactionist framework; (b) diagnostic and classification systems; (c) psychological, educational, and medical intervention-management approaches; and (d) research and program evaluation methods. Usually offered spring term. *Prereq: EDPS 266 or equiv.*

COPS 283. Professional Ethics and Legal Issues 3 sem. hrs.

Examines the ethical foundations and current ethical and legal guidelines for professionals in the behavioral health field. *Prereq: Cons. of instr.*

COPS 285. Consultation Strategies
3 sem. hrs.

Analysis of consultation models; designing and implementing intervention strategies; evaluation of the total process. Introduction to the role and functions of a consultant. Analysis of current conceptual models, overview of design and implementation of intervention strategies, and evaluation methods. Usually offered summer term. *Prereq: COUN 216 and cons. of instr.*

COPS 286. Organizational Counseling and Consultation Strategies 3 sem. hrs.

Focuses on the theory and methods relevant to the assessment, design, implementation, and evaluation of clinical interventions in organizational settings. Course content will address both individual and organizational interventions and evaluation methods. Offered occasionally. *Prereq: COPS 285 and cons. of instr.*

COPS 316. Introduction to Counseling Psychology 3 sem. hrs.

Introduction to the specialization of counseling psychology, including the history, philosophical bases, and current and emerging directions. Emphasis on critically reviewing literature in the field and examining psychologist roles and functions. Includes basic therapy skills training and field experiences. Offered fall term. *Prereq: Cons. of instr.; admission to counseling psychology program.*

COPS 320. Cognitive Assessment
3 sem. hrs.

Introduction to the theory and practice of cognitive assessment. Development of skills in administration and interpretation of intelligence and achievement tests and writing testing reports; introduction to special topics of testing children and neuropsychological assessment. Usually offered fall term. *Prereq: Cons. of instr.*

COPS 321. Personality Assessment
3 sem. hrs.

Extension of assessment skills developed in COPS 320. Development of skills in selection and interpretation of objective personality assessments and self-report inventories, integration of results in testing reports, and an introduction to projective personality assessment. Usually offered in spring term. *Prereq: COPS 320 and cons. of instr.*

COPS 322. Projective Assessment
3 sem. hrs.

Supervised study in administration, interpretation, and application of projective techniques. Offered occasionally. *Prereq: COPS 321 and cons. of instr.*

COPS 323. Advanced Assessment
3 sem. hrs.

Survey of specialized areas of psychological assessment for infants, children and adults. Focuses on psychological testing in developmental, educational, occupational/career, hospital/disability, mental health, medical and legal contexts. *Prereq: COPS 321 and COPS 336.*

COPS 324. Qualitative Research Methods in Psychology 3 sem. hrs.

Survey of qualitative research methods used in psychology. Includes discussion of the evolution of qualitative research in counseling psychology, as well as other related fields, and the controversies therein. *Prereq: EDPS 323; and cons. of instr.*

COPS 333. Seminar in Counseling Psychology 1 sem. hr.

Examines trends in the field with emphasis on current practices in professional psychology. *Prereq: COPS 369; and cons. of instr.*

COPS 335. Psychopharmacology 3 sem. hrs.

Introduction to psychopharmacology including central nervous system, basic drug mechanisms, modes of drug action, medication treatment for psychological/psychiatric disorders, efficiency of drugs. Offered every other spring term. *Prereq: COUN 230.*

COPS 336. Neuropsychology 3 sem. hrs.
Introduction to discipline of neuropsychology, brain-behavior relationships, neuropsychological mechanisms in neuropathological conditions, neuropsychological assessment and treatment. Offered every other fall term.
Prereq: COPS 320 and cons. of instr.

COPS 369. Counseling Psychology Practicum 1-4 sem. hrs.
S/U grade assessment. *Prereq: COUN 269 or equiv. and cons. of director of training.*

COPS 370. Seminar and Practicum in Supervision 1-3 sem. hrs.
Examines theory, research, and the practice of supervision in counseling psychology. Reviews ethical and professional guidelines for the training and supervision of counselors and psychologists. Includes practicum experiences supervising master's and/or doctoral students. Continues over two consecutive semesters for a total of three credits, and includes weekly seminar and group supervision meetings.
Prereq: COPS 369 and cons. of instr.

COPS 374. Advanced Issues in Counseling and Psychotherapy 3 sem. hrs.
Prereq: Cons. of instr.

COPS 393. Internship Preparation Seminar 0 sem. hrs.
Assists advanced students in making appropriate plans and developing strong applications for their predoctoral psychology internships. Monthly meetings are required of all students in the year prior to applying for internship. S/U grade assessment. *Prereq: Cons. of dept. ch.; cons. of director of training.*

COPS 394. Internship in Counseling Psychology 1-3 sem. hrs.
Supervised experiences in professional psychology. Internships must be planned in accordance with the departmental Counseling Psychology Internship handbook. A minimum of 2000 hours over one calendar year required. S/U grade assessment. *Prereq: Cons. of dept. ch.; cons. of director of training.*

COPS 398. Special Topics in Counseling Psychology 2-3 sem. hrs.
In-depth study of theories and concepts in counseling psychology which, because of their topicality, are not the subject of a regular course. The special topics will be designated in the *Schedule of Classes*. Offered occasionally.
Prereq: Cons. of instr.

Educational Psychology (EDPS)

EDPS 261. Introduction to Research Methods 3 sem. hrs.
Theories underlying various research methodologies and the research process. Development of a research proposal including the identification of a research problem and preparation of a research plan. Offered fall term.

EDPS 262. Psychology in Education 3 sem. hrs.
Advanced survey of selected topics in educational psychology; measurement, personality, the school as a social system, learning, theories of instruction. Offered occasionally.

EDPS 263. Psychology of Classroom Learning 3 sem. hrs.
Consideration of classroom learning and instructional methods in the light of theories of learning and research findings concerning readiness, motivation, guidance and reinforcement, retention and transfer. Offered occasionally.

EDPS 266. Life-Span Human Development 3 sem. hrs.
An examination of the interaction among biological, psychological, social and cultural factors that influence human development over the life span. Educational and counseling implications of these issues are discussed. Offered fall term.

EDPS 271. Student Development in Higher Education 3 sem. hrs.
Overview of the psychological and student affairs literature related to college student development. Applications of psychosocial, cognitive, developmental, and person-environment interaction theories to student affairs work are considered in depth. *Prereq: Cons. of instr.*

EDPS 275. Introduction to Statistics 3 sem. hrs.
Introduction to descriptive and inferential statistics including parametric, non-parametric techniques, correlation, etc. Use of computers to analyze statistical data. Usually offered spring term.

EDPS 284. Social Basis of Behavior 3 sem. hrs.
Advanced study of the problems and paradigms of social psychologists and how they are used by the practitioner. Major topics include: socialization, value and attitudes, social comparison, conformity, and group dynamics. Usually offered alternate spring term.

EDPS 294. Institutes 1-3 sem. hrs.
A series of institutes on various problems in educational psychology. Scheduled according to need and demand. Offered occasionally.

EDPS 298. Special Topics in Educational Psychology 1-3 sem. hrs.
In-depth study of theories and concepts in educational psychology which, because of their topicality, are not the subject of a regular course. The special topics will be designated in the *Schedule of Classes*. Offered occasionally.
Prereq: Cons. of instr.

EDPS 321. Intermediate Research and Statistics 3 sem. hrs.
Advanced topics in univariate and bivariate statistical analyses and related methodological issues. Covers analysis of variance, correlation, nonparametric statistics, and multiple regression. Includes use of statistical software. Usually offered fall term. *Prereq: EDPS 261 or equiv. and EDPS 275 or equiv.*

EDPS 322. Measurement and Evaluation 3 sem. hrs.
Psychometric theory, test construction, and evaluation procedures. Includes use of statistical software for investigating the reliability and validity of educational and psychological instruments. Usually offered spring term.
Prereq: EDPS 321 or equiv.

EDPS 323. Advanced Statistics and Research 3 sem. hrs.
A comprehensive survey of multivariate data analysis. Reviews multiple regression and proceeds through an introduction to structural equation modeling. Includes use of statistical software. Usually offered fall term. *Prereq: EDPS 321 or equiv.*

EDPS 362. Educational Psychology of Motivation 3 sem. hrs.
Classical and contemporary theory and practices. Motivation in complex situations, including set, level of aspiration, frustration. Consumer motivation. Usually offered fall term. *Prereq: Minimum of 15 graduate credits.*

EDPS 363. Theories of Learning 3 sem. hrs.
Systematic survey of theories, methods, and research findings in learning. Advanced treatment of selected topics. Offered occasionally.

EDPS 365. The Development of Memory and Cognition 3 sem. hrs.
Advanced study of normal development of memory and cognition and instructional strategies useful for importing memory abilities in retarded and learning disabled children and young adults. Offered occasionally. *Prereq: EDPS 266 or equiv. and EDPS 363 or equiv.*

EDPS 385. Advances in Educational Psychology 3 sem. hrs.
Current topics, problems, research trends and methods in the field of educational psychology: measurement and evaluation of human abilities; the study and modification of cognitive, affective and psychomotor behaviors; and present and projected issues facing professional development in educational psychology. Offered occasionally.

EDPS 394. Internship in Educational Psychology 3-6 sem. hrs.
Supervised experiences in educational psychology. Internships must be identified and planned by the student with an appropriate faculty member. Supervision should normally be by a School of Education faculty member. Each individual internship plan must be approved by the dean or his or her designee. Offered annually. S/U grade assessment. *Prereq: Cons. of instr.; post-master's stndg.; on program at Marquette.*

COUNSELING PSYCHOLOGY (COPS) See COUNSELING AND EDUCATIONAL PSYCHOLOGY (COEP)

DENTISTRY (DENT)

Dean: Lobb

Associate Dean for Academic Affairs: Lynch
Associate Dean for Research and Graduate Studies: Iacopino

Program Directors: Berzins (Dental Biomaterials), Bahcall (Endodontics), Bradley (Orthodontics), Ziebert (Prosthodontics), Vitolo (Advanced Training in General Dentistry)

For the complete 2005–2006 faculty listing, please see the University Directory section in the back of this publication.

DEGREES OFFERED

Master of Science, Plan A only, with two options (see the Master's Requirements section for details); Certificate

SPECIALIZATIONS

Master's: Dental Biomaterials, Endodontics, Orthodontics, Prosthodontics

Certificate: Advanced Training in General Dentistry, Endodontics, Orthodontics, Prosthodontics

GRADUATE PROGRAM OVERVIEW

The School of Dentistry offers graduate programs in advanced general dentistry (ATGD), dental biomaterials, and the ADA-recognized specialties of endodontics, orthodontics, and prosthodontics. These programs can be modified to allow conjoint interdisciplinary graduate work to be undertaken in any other unit of the university, and a master of science or doctoral degree can be obtained through an appropriate graduate degree-granting department of the university or through the interdisciplinary Ph.D. program. Faculty for each dental graduate program are drawn both from full-time Dental School faculty and from practicing specialists in the field who serve as adjunct faculty (part-time faculty).

The ATGD program is an ADA-accredited one-year clinical program with a non-accredited two- or three-year option. Upon successful completion of all clinical and didactic requirements, a certificate is issued. There is no tuition for this program and the resident receives a generous stipend. The dental biomaterials program is a non-accredited 2-year program leading to a master's degree and is comprised of courses from the School of Dentistry and the School of Engineering. Tuition for this program is charged at roughly 33% above the university per credit hour rate. Each of the specialty areas of study (endodontics, orthodontics, and prosthodontics) are fully accredited programs recognized by the American Dental Association. The specialty programs are clinically and research based, offering a specialty certificate and a master's degree. Graduates are prepared to handle complex clinical cases and to work effectively with both general dentists and other dental specialists. For all the specialty programs, the master's degree is required (certificates will not be awarded without the master's degree). The endodontics and orthodontics programs are two-year programs and the prosthodontics program is a three-year program. Tuition for the specialty programs is charged at a flat rate (20% during the summer term, 40% during the fall term, and 40% during

the spring term). Any applicable instrument or service fees are charged during the fall term each year.

SPECIALTY CERTIFICATE REQUIREMENTS

Course work requirements for each graduate specialty program (endodontics, orthodontics, and prosthodontics) are determined by the director of the specific program in accordance with accreditation standards. Courses include study in basic health sciences, dental biomaterials, research methodology, clinical dental specialties and other related science disciplines, as appropriate. In addition to course work, students also must complete patient care requirements, pass a comprehensive clinical examination, and submit all required evaluation data to receive the certificate.

MASTER'S REQUIREMENTS

Students may only be admitted to the program under Plan A, which has two options.

The first master's option is the traditional thesis option. Each candidate must conduct a research project on an appropriate clinical or basic science topic and successfully defend a thesis. Candidates are encouraged to pursue research which is appropriate to their chosen areas of study. Research projects are selected in consultation with the graduate program directors. Where possible, students in endodontics, orthodontics, and prosthodontics are encouraged to do clinically relevant research. Dental biomaterials students usually pursue the application of materials science principles to the study of dental biomaterials including relationships among compositions, physical properties, and clinical properties for dental biomaterial systems. The research and thesis work is supervised and approved by a primary mentor and a thesis committee according to university standards and protocol. Master's candidates are required to satisfactorily complete the Research Methodology and Statistics/Experimental Design sections of the graduate core curriculum as a prerequisite to their thesis research.

The second master's option is acceptance of a first author peer-reviewed publication based on an original research project. The thesis committee closely monitors preparation/submitting of the publication and determines appropriate coauthorship. Additionally, the publication is prepared in a bound format with a preface discussing the background of the investigation, a postscript discussing the application of the findings, and an appendix providing any data not used in the publication. Selection of the publication option requires completion of a traditional thesis in the event the work is not accepted for publication.

ADVANCED TRAINING IN GENERAL DENTISTRY

The School of Dentistry offers an Advanced Training in General Dentistry program that provides clinical experiences in all phases of general dentistry. The clinical training is complemented by a graduate didactic core curriculum that provides advanced education in the specialties of dentistry and comprehensive diagnosis and treatment planning. The ATGD program is a twelve-month intensive clinical care program. The resident must deliver care to under-

served minorities and rural underserved populations (accomplished by rotations to various clinics in Wisconsin) as well as to the general population. Successful completion of the program requires positive assessment of the resident's diagnostic and clinical skills as well as completion of the graduate core curriculum. Successful completion of the clinical and didactic components of the program results in a certificate of completion through the Marquette University Graduate School. No thesis is required. Additionally, there are non-accredited optional second and third years of training available. During these years, students may work toward a fellowship in the Academy of General Dentistry or the master of science degree in another program.

To qualify for an ATGD program stipend, applicants must be graduates of U.S. or Canadian dental schools. Applicants who have graduated from dental schools other than U.S. or Canadian will only be eligible for non-stipend positions, in which the space is very limited. All applicants, including those who have graduated from dental schools other than U.S. or Canadian, must take and submit scores from Part I and Part II of the National Board Dental Examinations.

DENTAL BIOMATERIALS

A student in the dental biomaterials program must complete a minimum of 30 credit hours of course work, consisting of a core curriculum of graduate dental biomaterials courses (24 credits) and six credit hours of thesis work. Elective courses in appropriate areas such as the dental graduate core curriculum (from the School of Dentistry) or materials science (from the College of Engineering) may be selected according to the backgrounds and interests of the individual students. Satisfactory completion of the didactic and research components of the program results in a master's degree through the Marquette University Graduate School. Thus, the dental biomaterials graduate program is an interdisciplinary program that consists of courses from the School of Dentistry and the College of Engineering. In addition to the courses offered by the School of Dentistry (described in detail under the Dental Biomaterials course description section of this bulletin), master's candidates may be required by their program adviser to select some of the courses offered through Mechanical Engineering depending on their area of program emphasis. These courses include MEEN 263 and MEEN 264 (described in detail under the Mechanical Engineering section of this bulletin).

ENDODONTICS AND ORTHODONTICS

A student in the endodontics or orthodontics program must complete a minimum of 30 credit hours of course work, including four credit hours in clinical practice per academic year (a total of eight credit hours for the two-year program), and six credit hours of thesis work. The remaining credits may be divided among courses specific to the specialty discipline and elective courses. The endodontics and orthodontics programs each require two full years of patient care. Satisfactory completion of the didactic and clinical components of the programs results in a specialty certificate through the Marquette University Graduate School.

Satisfactory completion of the research component of the programs results in a master's degree through the Marquette University Graduate School. The master's degree is required in order to receive the specialty certificate.

PROSTHODONTICS

The prosthodontic program is a three-year program. A student in the prosthodontic program must complete a minimum of 42 credit hours of course work, including 12 credit hours of clinical practice, and six credit hours of thesis work. The remaining credits will be from courses assigned by the program director. The prosthodontics program requires three full years of patient care. Satisfactory completion of the didactic and clinical components of the program results in a specialty certificate through the Marquette University Graduate School. Satisfactory completion of the research component of the program results in a master's degree through the Marquette University Graduate School. The master's degree is required in order to receive the specialty certificate.

PREREQUISITES FOR ADMISSION

Selection for admission is based upon the applicant's academic standing and clinical abilities. Competitive applicants will rank high in their dental school classes, have strong clinical skills and experiences, and have some experience with research. In general, to be admitted to any of the graduate programs in clinical dentistry, the applicant must have graduated from an approved dental school.

For the dental biomaterials program, the applicant may be either a dental school graduate or have a baccalaureate degree in science or engineering. In special cases, a student with a baccalaureate degree in another area, but who has an appropriate background, may be admitted to the dental biomaterials program.

APPLICATION DEADLINES

- September 1 For endodontics, orthodontics, and prosthodontics programs starting in June of the following year.
- April 1 For the ATGD program starting in June of the same year.

Note: No official deadline exists for the dental biomaterials program. The biomaterials program may begin during the summer session or during any semester. The program director notifies admitted students regarding the starting date for their program.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee. Applicants may also apply through the Postdoctoral Application Support Service (PASS) operated by the American Dental Education Association (ADEA).
2. Official transcripts from all current and previous colleges/universities except Marquette. International applicants must have course grades converted to numerical values of 4.00, 3.00, 2.00, and 1.00 or to corresponding letter grades of A, B, C, and

D, respectively. Where such a conversion is not possible, an explanation of the grading system used in the foreign dental school and undergraduate institution should accompany the official English translation of the grade transcripts.

3. Undergraduate and dental school grade-point averages and class rank in dental school.
4. Three letters of recommendation reflecting the applicant's clinical and academic abilities.
5. Scores from the National Board Dental Examinations, Part I and Part II. Not required from dental biomaterials applicants or from graduates of non-U.S./non-Canadian dental schools, except for ATGD applicants, for whom exam results are required.
6. The orthodontics program is part of the Postdoctoral Dental Matching Program. Applicants must enter the matching program. Details of this program can be obtained through the orthodontics department.
7. *(For dental biomaterials applicants only)* GRE scores (General Test only).
8. *(For international applicants only)* a TOEFL score or other acceptable proof of English proficiency. A minimum score of 550 on the paper-based version or 213 on the computer-based version is required. Minimum scoring for the new Internet-based version is still being established for this program.

GENERAL INFORMATION NON-DEGREE STUDENTS IN DENTISTRY COURSES

Normally, students with non-degree status are not permitted to enroll in dentistry courses; however, students from approved dental residency programs may enroll in dental graduate courses. Other students may be allowed to take dental graduate courses with prior approval from the School of Dentistry's associate dean for research and graduate studies.

DDS/GRADUATE PROGRAM

The School of Dentistry, in close cooperation with the Graduate School, offers a doctor of dental surgery/graduate program which allows qualified students to take selected graduate courses while still in dental school. Interested dental students must formally apply for entrance into the program. Information is available from the associate dean for research and graduate studies in the School of Dentistry.

Once accepted into the DDS/graduate program, students are eligible to register for graduate courses offered by the School of Dentistry and other units of the university. To enroll in graduate courses, DDS/graduate program students must have written consent from course directors, the associate dean for research and graduate studies in the School of Dentistry, and the vice provost for research and dean of the Graduate School. Students must also submit a request form (available in the Graduate School office). The amount of graduate work available to students is determined by ability and progress within the DDS program.

DDS/graduate students may seek admission to the following certificate or graduate programs offered by the School of Dentistry: gerontology, dental biomaterials, endodontics, orthodontics, or prosthodontics. Applications

are subject to specified deadlines, and students are required to follow the normal competitive admission process. DDS/graduate students also may seek admission to other master's programs such as biological sciences, education, engineering, business administration, mathematics/statistics/computer sciences, clinical psychology or public service. Upon acceptance into a master's program, DDS/graduate students may formally request a transfer of completed graduate credits into the master's program. Normally, a maximum of 12 credits may be transferred. (Transfer of credit forms are available in the Graduate School office.)

Further information about the DDS/graduate program can be obtained from the School of Dentistry associate dean for research and graduate studies.

COURSE DESCRIPTIONS

GRADUATE COURSES:

Dentistry (DENT)

DENT 201. Dental Graduate Didactic Core Curriculum 1 1-3 sem. hrs.

Section credit hours range from 1-3 for sections comprising 12-36 class hours.

DENT 202. Dental Graduate Didactic Core Curriculum 2 1-3 sem. hrs.

Section credit hours range from 1-3 for sections comprising 12-36 class hours.

DENT 203. Dental Graduate Didactic Core Curriculum 3 1-3 sem. hrs.

Section credit hours range from 1-3 for sections comprising 12-36 class hours.

The Dental Graduate Didactic Core Curriculum (DENT 201-203) is designed to cover all didactic content areas applicable to the advanced practice of general dentistry and to each of the specialty areas of dentistry. The content areas are sequenced to present: 1) material of interest for the general dentist seeking additional training beyond undergraduate dental education; 2) material of interest for each of the dental specialty areas; and 3) advanced material of interest for those intending to pursue academic/research careers. The presentations are organized to emphasize the overlapping nature of scientific foundational material and each of the dental specialties. Additionally, the presentations are designed to accommodate those students entering the program immediately after undergraduate education as well as those students returning from varying years of private dental practice. The course of study is comprised of yearly repeating content cycles (sections) within the summer session and fall/spring terms. The Dental Graduate Didactic Core Curriculum (DENT 201-203) is offered from 8-9 a.m. Monday - Friday. Students may register for as many DENT 201-203 sections as they wish during their graduate program residency. The sections covered in DENT 201-203 are listed below and a detailed description of section content is maintained in the form of comprehensive section syllabi available in the School of Dentistry office of the Associate Dean for Research and Graduate Studies. Students may register repeatedly for any grading period containing material of interest and are free to rotate in and

out of the courses as desired to obtain sections containing such material. Repeated registration for DENT 201-203 is differentiated through the use of section numbers that appear on official transcripts. Examinations and credit hours are variable and are determined by selected course sections. Grades and credit hours are maintained for each course section by the School of Dentistry office of the Associate Dean for Research and Graduate Studies and forwarded to the Graduate School at the end of the summer session or the fall/spring terms. Official transcripts will designate the specific sections completed and the credit hours associated with those sections.

The content area sections covered annually by the Graduate Didactic Core Curriculum are as follows: 1) Emergency Medicine - A comprehensive review of the pathophysiology and treatment of the most common medical emergency states. Emphasis is placed on prevention, diagnosis, and patient stabilization. 2) Dental Biomaterials - Physical, mechanical, chemical, biologic behavior, properties, characterization, and testing of dental biomaterials. Biocompatibility and odontocompatibility of implant materials as well as advanced clinical concepts for general dentistry. 3) Advanced Prosthodontic Biomaterials - Advanced biomaterials and clinical concepts specific for prosthodontics. 4) Advanced Endodontic Biomaterials - Advanced biomaterials and clinical concepts specific for endodontics. 5) Advanced Orthodontic Biomaterials - Advanced biomaterials and clinical concepts specific for orthodontics. 6) Interdisciplinary Periodontics - Structure/function of the periodontium. Periodontal disease and therapy as it relates to all other aspects of dentistry emphasizing surgical approaches, occlusion, splinting, and periodontic/endodontic pathosis. 7) Interdisciplinary Prosthodontics - A comprehensive discussion of prosthodontic procedures as they relate to other areas of dental practice emphasizing removable complete/partial dentures, fixed partial dentures, maxillofacial prosthetics, and implants. 8) Advanced Prosthodontics - Advanced prosthodontic procedures emphasizing removable complete/partial dentures, fixed partial dentures, maxillofacial prosthetics, and implants. 9) Interdisciplinary Endodontics - Endodontic techniques as they relate to other areas of dental practice. 10) Advanced Endodontology - Advanced endodontic techniques with emphasis on sophisticated clinical procedures/surgical approaches and their rationale. 11) Interdisciplinary Orthodontics - A comprehensive discussion of orthodontic techniques as they relate to other areas of dental practice emphasizing cephalometrics, biomechanics of tooth movement, and tissue response to orthodontic procedures. 12) Advanced Orthodontics - Advanced orthodontic techniques emphasizing cephalometrics, biomechanics of tooth movement, and tissue response to orthodontic procedures. 13) Technology and Informatics - A review of the current computer-based technologies available for independent self-directed learning, research, teaching approaches, patient care, and professional communication. Emphasis is placed on biomedical applications and laboratory exercises are included to reinforce didactic concepts. 14) Craniofacial Growth and Development - Dental and facial

growth and development from the embryonic period through adult life. 15) Advanced Oral Pathology - Principles and concepts of histopathology presented through review and microscopic study of surgical material and biopsy specimens of craniofacial lesions emphasizing pathogenesis of disease and histologic diagnosis. Laboratory exercises are included to reinforce didactic concepts. 16) Head/Neck Anatomy and Osteology - Systemic and regional approaches to the study of head/neck anatomy. Emphasis is placed on vasculature, musculature, innervation, lymphatic drainage, and morphology/anatomical landmarks of the various bones of the head/neck. Laboratory dissection and demonstration reinforce didactic concepts. 17) Pharmacology and Pain/Anxiety Management - The pharmacology of drugs commonly used for treatment of non-dental conditions that may affect the delivery of dental care either through direct action or through interaction with drugs commonly used in dental care. Emphasizes the neurophysiology of pain, control of pain by various classes of pharmacologic agents, and the behavioral management of dental fears. 18) Academics and Research Methodology/Design - A comprehensive presentation of the academic, scholarly, and research process. Emphasis is placed on evaluating the literature, scientific writing, grant writing, animal/human use, ethics, professional communication, and preparing abstracts, manuscripts, and presentations. 19) Biostatistics - A comprehensive presentation of the various aspects of statistics and statistical evaluation. Emphasis is placed on reproducibility, power, validity, precision, and accuracy. 20) Oral Microbiology, Infection, and Immunology - Inflammation, immunity, and oral microbiology emphasizing the mechanisms of microbial colonization and invasion, host response, and pathogenesis of dental diseases. 21) Pulpal/Periapical Biology and Pathology - Applied basic sciences of pulpal and periapical histology, physiology, and pathology. Emphasis is placed on preparation, diagnosis, and interpretation of biopsy samples. 22) Biochemistry and Physiology of Mineralized Tissues - The chemical and cellular constituents of mineralized tissues and modern methods for their study. Emphasis is placed on bone physiology and metabolism. 23) Radiology and Imaging - Advanced concepts in radiology and modern imaging techniques applied to all aspects of dentistry. 24) Craniomandibular Function and Disorders - Neuromuscular and occlusal physiology, diagnosis, and treatment of functional disturbances involving the craniofacial region. 25) Temporomandibular Disorders in Orthodontics - Neuromuscular and occlusal physiology, diagnosis, and treatment of functional disturbances involving the temporomandibular articulation specific to orthodontics. 26) Oral Physiology - Current topics in salivary function/dysfunction, oral neurophysiology, and physiology of taste, craniofacial musculature, and breathing/swallowing reflexes. Emphasis is placed on the relationship between oral diseases and systemic diseases/conditions. 27) Geriatrics/Gerontology - A comprehensive presentation of oral health care for older adults emphasizing demographics/epidemiology, specific age-related pathosis, customized treatment approaches, and interdisciplinary/integrative

patient management. 28) Pediatrics - The special management and treatment concerns of pediatric patients emphasizing prevention and trauma. 29) Inflammation and Wound Healing - Current concepts in the cell/molecular biology of inflammation and wound healing emphasizing predictable manipulation of the wound environment. 30) Cell/Molecular Biology and Molecular Medicine - Current concepts in cell/molecular biology as they relate to diagnostics and treatment with emphasis on immunologic approaches and gene therapy. 31) Speech Pathology - A review of the various speech pathologies emphasizing the interdisciplinary and integrative nature of treatment involving the dental professional. 32) Applied Clinical Endodontic Techniques - The latest applications of new treatment techniques and methodologies as they relate to endodontics. 33) Applied Clinical Orthodontic Techniques - The latest applications of new treatment techniques and methodologies as they relate to orthodontics. 34) Applied Clinical Prosthodontic Techniques - The latest applications of new treatment techniques and methodologies as they relate to prosthodontics. 35) Public Health/Public Service - The epidemiology of dental disease and access to care emphasizing the role of the dental professional in community health. A review of current local, state, and federal programs for dental services. 36) Practice Management for Prosthodontists - A review of the current business aspects of dental practice for all aspects of prosthodontics with special emphasis on solo practice, group practice, dental clinics, and community health centers/institutionalized care. 37) Practice Management for Endodontists - A review of the current business aspects of dental practice for all aspects of endodontics with special emphasis on solo practice, group practice, dental clinics, and community health centers/institutionalized care. 38) Practice Management for Orthodontists - A review of the current business aspects of dental practice for all aspects of orthodontics with special emphasis on solo practice, group practice, dental clinics, and community health centers/institutionalized care. 39) Jurisprudence - A review of the current legal aspects of dental practice for all areas of dentistry emphasizing patient care, infection control, and employee relations. 40) Modern Analytical Approaches in Electron Microscopy and X-ray Diffraction - A comprehensive review and demonstration of modern approaches to scanning/transmission electron microscopy, atomic tunneling microscopy, and infrared spectroscopy/solubility analyses. 41) Practice Ethics - A review of various ethical dilemmas in practice settings including case studies for group discussion. 42) Implantology - Basic concepts for implant placement including review of relevant maxillary/mandibular anatomy, evaluation and screening of patients, augmentation considerations, surgical techniques, surgical complications/management, and relevant emergency procedures.

DENT 220. Clinical Orthodontics 1

2 sem. hrs.

Lectures, laboratory and clinical treatment of patients with various types of malocclusion.

Prereq: Admitted to Orthodontic program.

DENT 221. Clinical Orthodontics 2

2 sem. hrs.

Lectures, laboratory and clinical treatment of patients with various types of malocclusion.

Prereq: Admitted to Orthodontic program.

DENT 222. Clinical Orthodontics 3

2 sem. hrs.

Lectures, laboratory and clinical treatment of patients with various types of malocclusion.

Prereq: Admitted to Orthodontic program.

DENT 223. Clinical Orthodontics 4

2 sem. hrs.

Lectures, laboratory and clinical treatment of patients with various types of malocclusion.

Prereq: Admitted to Orthodontic program.

DENT 227. Histopathology of Tooth Movement

1 sem. hr.

Histological and pathological aspects of tooth movement emphasizing tissue response to orthodontic forces.

Prereq: Admitted to Orthodontic program.

DENT 235. Orthodontic Seminar 1

1 sem. hr.

Combines basic/applied technics and maintenance of normal occlusal development. Students will learn the fabrication and biomechanics of various appliances used in prevention and interception of malocclusions. Concurrently, students will be taught in the theory of normal occlusal development, diagnosis, prevention, and interception of certain malocclusions. *Prereq: Admitted to Orthodontic program.*

DENT 236. Orthodontics Seminar 2

1 sem. hr.

A continuation of a series of courses beginning with DENT 235. *Prereq: Admitted to Orthodontic program.*

DENT 237. Orthodontic Seminar 3

1 sem. hr.

A continuation of a series of courses beginning with DENT 235. *Prereq: Admitted to Orthodontic program.*

DENT 238. Orthodontics Seminar 4

1 sem. hr.

A continuation of a series of courses beginning with DENT 235. *Prereq: Admitted to Orthodontic program.*

DENT 268. Clinical Prosthodontics 1

2 sem. hrs.

Clinical treatment concepts in basic and advanced restorative procedures.

Prereq: Admitted to Prosthodontics program.

DENT 269. Clinical Prosthodontics 2

2 sem. hrs.

See DENT 268. *Prereq: DENT 268, and admitted to Prosthodontics program.*

DENT 270. Clinical Prosthodontics 3

2 sem. hrs.

See DENT 268. *Prereq: DENT 268, DENT 269, and admitted to Prosthodontics program.*

DENT 271. Clinical Prosthodontics 4

2 sem. hrs.

See DENT 268. *Prereq: DENT 268, DENT 269, DENT 270, and admitted to Prosthodontics program.*

DENT 272. Clinical Prosthodontics 5

2 sem. hrs.

Complete dentures, fixed and removable partial dentures, implant prosthodontics, maxillofacial prosthodontics and associated clinical disciplines of dentistry involved in comprehensive rehabilitation of the oral cavity. *Prereq: DENT 268, DENT 269, DENT 270, DENT 271, and admitted to Prosthodontics program.*

DENT 273. Clinical Prosthodontics 6

2 sem. hrs.

See DENT 272. *Prereq: DENT 268, DENT 269, DENT 270, DENT 271, DENT 272, and admitted to Prosthodontics program.*

DENT 274. Seminar in Complete Denture Prosthodontics

1 sem. hr.

In-depth review and discussion of complete denture literature and its theoretical, technical, and clinical application. Includes regularly-scheduled diagnosis and treatment planning sessions in all phases of prosthodontics. Offered on a rotating schedule with other prosthodontics seminars. *Prereq: Admitted to Prosthodontics program.*

DENT 275. Seminar in Removable Partial Denture Prosthodontics

1 sem. hr.

In-depth review and discussion of removable partial dentures literature and its theoretical, technical, and clinical application. Includes regularly-scheduled diagnosis and treatment planning sessions in all phases of prosthodontics. Offered on a rotating schedule with other prosthodontics seminars. *Prereq: Admitted to Prosthodontics program.*

DENT 276. Seminar in Fixed Partial Denture Prosthodontics

1 sem. hr.

In-depth review and discussion of fixed partial denture and rehabilitation literature, its theoretical, technical, and clinical application. Includes regularly-scheduled diagnosis and treatment planning sessions in all phases of prosthodontics. Offered on a rotating schedule with other prosthodontics seminars. *Prereq: Admitted to Prosthodontics program.*

DENT 277. Seminar in Maxillofacial Prosthetics and Related Disciplines

1 sem. hr.

In-depth literature review and discussion of theoretical, technical, and clinical application of maxillofacial prosthetics, surgical and radiation oncology, speech pathology, and other related disciplines. Includes regularly-scheduled diagnosis and treatment planning sessions in all phases of prosthodontics. Offered on a rotating schedule with other prosthodontics seminars. *Prereq: Admitted to Prosthodontics program.*

DENT 278. Seminar in Implant Prosthodontics

1 sem. hr.

In-depth review and discussion of complete and partial fixed, single tooth and removable implant rehabilitation literature and its theoretical and clinical applications. Includes regularly-scheduled diagnosis and treatment sessions in all phases of prosthodontics. Offered on a rotating schedule with other prosthodontic seminars.

Prereq: Admitted to Prosthodontics program.

DENT 279. Seminar in Occlusion/TMD

1 sem. hr.

In-depth review and discussion of concepts of occlusion and articulation, occlusal analysis, diagnosis and treatment of facial pain and temporomandibular disorders. Includes regularly-scheduled diagnosis and treatment planning sessions in all phases of prosthodontics. Offered on a rotating schedule with other prosthodontic seminars. *Prereq: Admitted to Prosthodontics program.*

DENT 280. Clinical Patient Care

1-7 sem. hrs.

Designed to account for time dental graduate residents spend providing patient care. This can range from 1-7 credit hours per semester. S/U grade assessment.

DENT 284. Endodontic Literature and Book Review 1

1 sem. hr.

Discussion of current and classic literature, library research; review current textbooks, conventions and dental meetings. Some lectures by graduate students relating endodontics to the other disciplines, systemic health, and potential areas of research. *Prereq: Admitted to Endodontics program.*

DENT 285. Endodontic Literature and Book Review 2

1 sem. hr.

See DENT 284. *Prereq: Admitted to Endodontics program.*

DENT 286. Endodontic Literature and Book Review 3

1 sem. hr.

See DENT 284. *Prereq: Admitted to Endodontics program.*

DENT 287. Endodontic Literature and Book Review 4

1 sem. hr.

See DENT 284. *Prereq: Admitted to Endodontics program.*

DENT 288. Endodontic Clinic and Case Review 1

2 sem. hrs.

Complete diagnosis and treatment of clinic cases using all available diagnostic aids and treatment modalities. Endodontic surgical cases to be performed. Clinical cases to be presented for discussion. *Prereq: Admitted to Endodontics program.*

DENT 289. Endodontic Clinic and Case Review 2

2 sem. hrs.

Complete diagnosis and treatment of clinic cases using all available diagnostic aids and treatment modalities. Endodontic surgical cases to be performed. Clinical cases to be presented for discussion. *Prereq: Admitted to Endodontics program.*

DENT 290. Endodontic Clinic and Case Review 3

2 sem. hrs.

Complete diagnosis and treatment of clinic cases using all available diagnostic aids and treatment modalities. Endodontic surgical cases to be performed. Clinical cases to be presented for discussion. *Prereq: Admitted to Endodontics program.*

DENT 291. Endodontic Clinic and Case Review 4

2 sem. hrs.

Complete diagnosis and treatment of clinic cases using all available diagnostic aids and treatment modalities. Endodontic surgical cases to be performed. Clinical cases to be presented for discussion. *Prereq: Admitted to Endodontics program.*

DENT 294. Teaching Experience in Dentistry
1-2 sem. hrs.

Assigned teaching duties in the didactic, preclinical, and clinical dental sciences.

DENT 295. Independent Study 1-3 sem. hrs.
Course work customized to meet specific student interests/needs. *Prereq: Cons. of instr.*

DENT 296. Principles of Geriatric Dentistry
3 sem. hrs.

Designed for students with little to no dentistry knowledge and will focus on readings and case-studies of the basic concepts involved in geriatric dentistry. Emphasis will be placed on patient assessment including social/psychological aspects, patient management including advocacy/referral, and the interdisciplinary/multidisciplinary aspects of patient care. Offered fall term.

DENT 298. Advanced Topics in Geriatric Dentistry 3 sem. hrs.

Designed for dentists and dental students and will focus on readings and case-studies of advanced topics of geriatric dental care. Emphasis will be placed on cell/molecular biology and medicine, specialized techniques for care of geriatric patients, and integrated preventive measures. Offered spring term.

DENT 299. Master's Thesis 1-6 sem. hrs.
Credit hours assigned to thesis preparation and scholarship.

DENT 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.

Fee. S/U grade assessment.
Prereq: Cons. of dept ch.

DENT 892. Continuous Enrollment — Half-Time 0 sem. hrs.

Fee. S/U grade assessment.
Prereq: Cons. of dept ch.

DENT 893. Continuous Enrollment — Full-Time 0 sem. hrs.

Fee. S/U grade assessment.
Prereq: Cons. of dept ch.

Advanced Training in General Dentistry (ATGD)

ATGD 210. Introduction to Advanced Clinical Dentistry 4 sem. hrs.

Residents are assigned clinical cases that require treatment in two or more clinical disciplines. Trainees are responsible for accurate compilation and documentation of clinical findings essential for appropriate treatment planning and case completion. Residents will provide comprehensive dental services to patients or will make referrals to appropriate specialists. Trainees will also engage in assessment, management, and treatment of dental emergencies. S/U grade assessment. *Prereq: Admitted to ATGD program.*

ATGD 211. Clinical Advanced General Dentistry 2 4 sem. hrs.

Residents continue cases begun earlier (see ATGD 210) and begin treatment of additional cases. Increasingly difficult patients, including those with compromised medical histories, are introduced. Residents will also respond to

dental consults from medical disciplines in a hospital setting and learn hospital protocol. Emphasis on development of critical thinking skills and abilities to conduct individualized risk assessments and to design appropriate prevention measures while treating a diverse array of patients. S/U grade assessment. *Prereq: Admitted to ATGD program.*

ATGD 212. Clinical Advanced General Dentistry 3 4 sem. hrs.

See ATGD 211. S/U grade assessment.
Prereq: Admitted to ATGD program.

ATGD 213. Clinical Advanced General Dentistry 4 4 sem. hrs.

See ATGD 211. S/U grade assessment.

**ATGD 214. Discipline Topics/
Multi-Disciplinary Treatment Planning
in Advanced General Dentistry** 1
3 sem. hrs.

This seminar series considers current dental literature for the purpose of developing scientifically sound treatment philosophies. Topics include, but are not limited to, pulp biology and therapy, behavior management, surgical and restorative techniques, geriatric care, and minor orthodontic treatment modalities. Residents will develop and present cases that will be evaluated on the quality of the documentation and treatment planning demonstrated. Emphasis in the seminars will be placed on developing the ability to diagnose, treatment plan, and problem solve. S/U grade assessment. *Prereq: Admitted to ATGD program.*

**ATGD 215. Discipline Topics/
Multi-Disciplinary Treatment Planning
in Advanced General Dentistry** 2
3 sem. hrs.

See ATGD 214. S/U grade assessment.
Prereq: Admitted to ATGD program.

**ATGD 216. Discipline Topics/
Multi-Disciplinary Treatment Planning
in Advanced General Dentistry** 3
3 sem. hrs.

See ATGD 214. S/U grade assessment.
Prereq: Admitted to ATGD program.

**ATGD 217. Discipline Topics/
Multi-Disciplinary Treatment Planning
in Advanced General Dentistry** 4
3 sem. hrs.

See ATGD 214. S/U grade assessment.
Prereq: Admitted to ATGD program.

Dental Biomaterials (BIMA)

BIMA 201. Mechanical Behavior of Dental Biomaterials 3 sem. hrs.

Basic principles of mechanics, elastic deformation, plastic deformation and fracture. Comparison of mechanical behavior of metallic, ceramic and polymer dental biomaterial systems. Discussion of tension, compression, shear, bending, torsion, hardness and impact tests for dental biomaterials. Includes laboratory exercises.

BIMA 203. Polymeric Dental Biomaterials 2 sem. hrs.

Compositions and properties of polymers utilized in prosthetic, restorative, orthodontic,

preventive, and implant dentistry. The materials include poly (methyl methacrylate), BIS-GMA, polyurethane and polyvinyl products in the form of resins, composites and microfills polymerized by heat, chemicals and ultraviolet or visible lights. Includes laboratory exercises.

BIMA 204. Advanced Principles of Dental Biomaterials Science 3 sem. hrs.

Basic and advanced principles of dental biomaterials science. Fundamental scientific principles, and physical, mechanical, chemical and biological properties of restorative and preventive dental biomaterials. Relationships between properties and clinical performance of these materials and methods used for testing them.

BIMA 205. Dental Metallurgy 1 3 sem. hrs.

Theory and application of metallurgical principles to the study of dental alloy systems. Dental amalgams, noble and base metal casting alloys, and wrought alloys. Area and extent of study determined by individual needs of student. Includes laboratory exercises.

BIMA 206. Dental Metallurgy 2 3 sem. hrs.

Theory and application of metallurgical principles to the study of dental alloy systems. Dental amalgams, noble and base metal casting alloys, and wrought alloys. Area and extent of study determined by individual needs of student. Includes laboratory exercises.

BIMA 207. Dental Ceramics 3 sem. hrs.

Basic principles of ceramic structures and properties. History, properties and technology of dental porcelains, gypsum products and dental casting investments. Includes laboratory exercises.

**BIMA 210. Advanced Experimental
Techniques for Dental Biomaterials
Research** 1 1 sem. hr.

Biomaterials Research 1 Laboratory courses. Topics may vary, but will generally include scanning electron microscopy, mechanical testing procedures, and X-ray diffraction. *Prereq: Admission to graduate program in dental biomaterials.*

**BIMA 211. Advanced Experimental
Techniques for Dental Biomaterials
Research** 2 1 sem. hr.

Biomaterials Research 2 Laboratory courses. Topics may vary, but will generally include scanning electron microscopy, mechanical testing procedures, and X-ray diffraction. *Prereq: Admission to graduate program in dental biomaterials.*

BIMA 219. Dental Cements 2 sem. hrs.

Compositions, setting reactions and properties of zinc phosphate, zinc oxide-eugenol, polycarboxylate, glass ionomer and resin dental cements. Effects of clinical variables and the ADA specifications related to these materials will be included. May include laboratory exercises.

BIMA 227. Dental Impression Materials
2 sem. hrs.

Classification, composition and properties of the various impression materials used in restorative and prosthetic dentistry. The material systems to be discussed include impression compound, hydrocolloids, polysulfides, polyethers and silicones. May include laboratory exercises.

BIMA 229. Dental Casting Procedures

3 sem. hrs.

History and development of dental casting procedures. Basic principles and techniques for centrifugal, vacuum and pressure casting. Solidification of metals and classification of porosities. Detailed considerations for casting of noble and base metal dental alloys. Includes laboratory exercises.

BIMA 265. Special Topics in Dental Biomaterials 1-3 sem. hrs.

Practical laboratory exercises designed to provide the student with specific skill sets and analytic approaches used in modern materials research.

BIMA 275. Dental Biomaterials Literature Review 1 1-3 sem. hrs.

Discussion of current and classic literature in dental biomaterials. Topics and journals discussed will be rotated to provide an overview and range of different materials, properties, and applications. Class discussion and presentations are a main component of the class.

Prereq: Grad. student stndg. in BIMA grad program or cons. of dept.

BIMA 276. Dental Biomaterials Literature Review 2 1-3 sem. hrs.

Discussion of current and classic literature in dental biomaterials. Topics and journals discussed will be rotated to provide an overview and range of different materials, properties, and applications. Class discussion and presentations are a main component of the class.

Prereq: Grad. student stndg. in BIMA grad program or cons. of dept.

BIMA 277. Dental Biomaterials Literature Review 3 1-3 sem. hrs.

Discussion of current and classic literature in dental biomaterials. Topics and journals discussed will be rotated to provide an overview and range of different materials, properties, and applications. Class discussion and presentations are a main component of the class.

Prereq: Grad. student stndg. in BIMA grad program or cons. of dept.

BIMA 278. Dental Biomaterials Literature Review 4 1-3 sem. hrs.

Discussion of current and classic literature in dental biomaterials. Topics and journals discussed will be rotated to provide an overview and range of different materials, properties, and applications. Class discussion and presentations are a main component of the class.

Prereq: Grad. student stndg. in BIMA grad program or cons. of dept.

BIMA 294. Teaching Experience in Dental Biomaterials 1-2 sem. hrs.

Teaching and preclinical laboratory assignments in dental biomaterials for undergraduate dental students.

BIMA 295. Independent Study 1-3 sem. hrs.

Course work customized to meet specific student interests/needs. *Prereq: Cons. of instr.*

BIMA 299. Master's Thesis 1-6 sem. hrs.

Credit hours assigned to thesis preparation and scholarship.

BIMA 300. Biomaterials Seminar 1 sem. hr.

Current topics and concepts in materials science.

BIMA 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.*

BIMA 892. Continuous Enrollment — Half-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.*

BIMA 893. Continuous Enrollment — Full-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.*

DISPUTE RESOLUTION (DIRS)

Director and Associate Professor of Law:

Soeka

Distinguished Adjunct Associate Professor:

Bellman

Adjunct Associate Professor: Geske, Gibson

Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREE OFFERED

Graduate Certificate in Dispute Resolution (For information on a master of arts in public service with a specialization in dispute resolution, see the section on Public Service.) With appropriate approvals, credits in DIRS may also be applied to master's degree programs in business administration, communication, educational psychology, human resources, and nursing administration. DIRS also offers a joint program with the Law School.

PROGRAM DESCRIPTION

Dispute resolution is an interdisciplinary, non-degree graduate program leading to the certificate in dispute resolution. The program combines the fields of law, business, psychology, sociology, political science, health sciences, education and communication in dealing with today's multi-faceted issues in resolving disputes. The program seeks to train professionals, primarily those in the fields of law, health care, education, and business, to practice as third party neutrals in the field of dispute resolution, or to be knowledgeable participants in the dispute resolution process. *Note:* Students must begin their course work with DIRS 203.

PREREQUISITES FOR ADMISSION

Applicants are expected to have a baccalaureate degree or its academic equivalent from a college or university of recognized standing, a grade point average of B (3.00 on a 4.00 scale) or above in undergraduate course work, and background in an appropriate undergraduate major.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation.
4. Test scores from a recognized graduate school entrance examination; e.g., GRE,

GMAT, or LSAT. (Applicants must score at the 50th or higher percentile.)

For C.D.R.-J.D. applicants, recommendation letters and graduate school entrance examination test scores are waived.

CERTIFICATE REQUIREMENTS

To earn the certificate in dispute resolution, a student must complete 15 credit hours (5 courses) of course work as defined below. With appropriate approvals, these credits may be applied to other graduate programs. DIRS 200 Dispute Resolution Theory
DIRS 201 Advanced Issues in Dispute Resolution
DIRS 203 Mediation (Prerequisite for all courses)
DIRS 207 Advanced Mediation
DIRS 210 Practicum in Dispute Resolution

JOINT PROGRAM OF STUDY CERTIFICATE – J.D. DEGREE

The Center for Dispute Resolution Education, in conjunction with the Law School, offers a program of joint study leading to a certificate in dispute resolution (C.D.R.) and a juris doctor degree. Students seeking admission to the joint program must apply to the Law School and meet the Law School's admission requirements. Students must simultaneously apply to the Graduate School, meeting the application requirements listed above. Students start this joint program as a law student. Upon completion of the law program, students will be officially admitted to the dispute resolution certificate program for completion of the remainder of the joint program.

Joint program students must have completed 27 credit hours at the Law School with a cumulative average of 2.00 before entering the graduate program in dispute resolution (DIRS). Students will be able to apply the nine credits taken in DIRS toward their juris doctor degree. Law students could take any of the courses offered by DIRS for up to nine law school credits. A total of 15 credits are required for the C.D.R.

In general, joint program students will pay tuition at the full-time (flat tuition) Law School rate while a full-time law student, regardless of whether or not they are taking additional graduate courses. Upon receiving the juris doctor degree, joint program students will pay Graduate School tuition at the per credit rate for graduate courses. Part-time law students will pay the per credit Law School rate for all courses.

Additional details about the C.D.R.-J.D. program are available from the Center for Dispute Resolution office or from the Law School Admissions office.

COURSE DESCRIPTIONS

GRADUATE COURSES:

DIRS 200. Dispute Resolution Theory 3 sem. hrs.

The development of conflict between and among individuals, organizations, and governmental units; various models for conflict and types of conflict resolution will also be surveyed. *Prereq: DIRS 203.*

DIRS 201. Advanced Issues in Dispute Resolution 3 sem. hrs.

Explores current theoretical and applied issues in mediation. These issues may include: communication theories and models, legislative enactments, dispute resolution systems design, and court-connected dispute resolution systems. Case studies provide an opportunity to examine the theory through an applied approach. *Prereq: DIRS 203.*

DIRS 203. Mediation 3 sem. hrs.

Mediation as facilitated negotiation, three-party processes vs. two-party processes, interest-based bargaining vs. positional or adversarial bargaining. Concepts will be explored through the use of class role plays, which will be videotaped and critiqued as a part of mediation training.

DIRS 207. Advanced Mediation 3 sem. hrs.

An exploration of more advanced issues in the practice of mediation, including brokering, emotions in mediation, agenda, joint session, caucuses, agreements and multi-party/multi issue cases. *Prereq: DIRS 203.*

DIRS 210. Practicum in Dispute Resolution 1-3 sem. hrs.

Required of all students; for example, an internship may be established with a community mediation center, a court system, a hospital peer review committee, or a public school teachers' collective bargaining unit. Placements will be arranged on an individual basis. S/U grade assessment. *Prereq: DIRS 203 and DIRS 207.*

DIRS 295. Independent Study 3 sem. hrs.**ECONOMICS (ECON)**
See **BUSINESS ADMINISTRATION (BUAD)****EDUCATION (EDUC)**

Dean: Henk

Chair of Counseling and Educational Psychology and Associate Professor: Campbell
Chair of Educational Policy and Leadership and Professor: Leslie

DEGREES OFFERED

Master of Arts, Master of Education;
Doctor of Philosophy; Specialist Certificate

The specialist certificate prepares students to obtain state certification and licensure.

PROGRAM OVERVIEW

The School of Education prepares graduate students to assume leadership roles in the areas of study provided by its programs and specializations. The School of Education is made up of two departments: Counseling and Educational Psychology (COEP) and Educational Policy and Leadership (EDPL).

The following degrees are offered through **Counseling and Educational Psychology**: doctoral degree in counseling psychology; master's degrees in counseling and in educational psychology.

The following degrees and specializations are offered through **Educational Policy and Leadership**: master's and doctoral degrees; specialist certificate; specializations offered

in curriculum and instruction and in educational leadership.

While Marquette University is concerned about the professional advancement of its students, facilitates the process of certification, and provides excellent educational opportunities, it cautions them that professional success in a chosen field requires, above all else, constant development of individual abilities, personal initiative, and a professional sense of responsibility for fulfilling all one's appropriate legal, ethical, and other professional responsibilities. Hence, the university facilitates the licensure process for students pursuing careers in education and other human service fields, but students must also take responsibility for meeting all the requirements for licensure or certification in their chosen fields.

**EDUCATION:
COUNSELING (COUN)**
See **COUNSELING AND
EDUCATIONAL
PSYCHOLOGY (COEP)****EDUCATION: COUNSELING
PSYCHOLOGY (COPS)**
See **COUNSELING AND
EDUCATIONAL
PSYCHOLOGY (COEP)****EDUCATION: EDUCATIONAL
POLICY AND LEADERSHIP
(EDPL)**
See **EDUCATIONAL POLICY
AND LEADERSHIP (EDPL)****EDUCATION: EDUCATIONAL
PSYCHOLOGY (EDPS)**
See **COUNSELING AND
EDUCATIONAL
PSYCHOLOGY (COEP)****EDUCATIONAL
POLICY AND
LEADERSHIP (EDPL)**

Chair and Professor: Leslie

Distinguished Professor of Education: Fuller
Director of Graduate Studies and Associate Professor: Whipp

Professor: Dupuis (*Emeritus*), Lowe, Pink,
A. Thompson (*Emeritus*)

Associate Professor: Augenstein (*Emeritus*),
Schweizer

Assistant Professor: Burant, Chubbuck, Clark,
Eckman, McClure

Visiting/Clinical Assistant Professor: Korb,
van den Kieboom

Adjunct Assistant Professor: Albrightson,
Cepelka, Harper, Hillman

Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREES OFFERED

Master of Arts (M.A.), Plan B (non-thesis option, default) or Plan A (thesis option, by request), Master of Education (M.Ed.), Plan B

(non-thesis option, default) or Plan A (thesis option, by request); Doctor of Philosophy; Specialist Certificate

SPECIALIZATIONS

M.A., M.Ed., Curriculum and Instruction,
Specialist Educational Leadership
Certificate:
Ph.D.: None

PROGRAM DESCRIPTIONS

The educational policy and leadership program prepares graduate students to assume educational leadership roles in the areas of study provided by its programs and specializations. A distinctive characteristic of the program is its commitment to the development of professionals as agents of critical inquiry and social justice. This is done through a systematic focus on the social, cultural, philosophical and historical contexts of education. The educational policy and leadership program seeks to apply the university goals of Christian commitment and scholarship to settings related to educational practice and policy, especially in public and private schools and institutions of higher education.

**MASTER'S AND
DOCTORAL PROGRAMS**

The goal of the master's and doctoral programs is to engage the professional educator in extended critical reflection on the principles, practices, and rationales of human-service leadership in contemporary society. Specifically, the programs seek to develop educational leaders in K-12 schools, colleges, universities, and educational organizations with expertise in the historical, philosophical, and sociological foundations of educational policy issues. The programs are designed to accommodate the working professional, and program content is composed to reflect student backgrounds, interests, and professional objectives. There are two specializations offered within the master's and doctoral programs: educational leadership and instructional leadership.

Curriculum and Instruction

The curriculum and instruction specialization invites students to pursue critical study of curriculum, teaching, and subject area knowledge in two master's programs: the master of arts and the master of education. Courses in this specialization are offered in both online and face-to-face formats.

Educational Leadership

The educational leadership specialization invites students to pursue the critical study of organizational leadership in K-12 schools and in higher education and to assume leadership roles in those settings.

K-12 Administration

The master of education (M.Ed.) and certification programs in educational leadership prepare students for these Wisconsin administrative licenses: Principal, Director of Instruction, and District Superintendent. (See Application Requirements and the program requirement sections for additional information.)

College Student Personnel

The master of education (M.Ed.) in educational leadership, with special emphasis in college student personnel, prepares students

for careers in student affairs settings in higher education such as: academic advising, career development centers, student unions, international student services, multicultural affairs, orientation programs, residential living programs, admissions, and student organizations. The program includes course work in leadership, counseling, educational psychology, and higher education and is collaboratively offered by the Departments of Educational Policy and Leadership (EDPL) and Counseling and Educational Psychology (COEP) in the School of Education.

M.A.

This master's degree is designed for practicing teachers in K-12 schools or higher education. The program is grounded in the National Board of Professional Teaching Standards and is designed to help students become master teachers, conduct action research, and act as leaders and change agents in their schools, districts, and communities.

M.Ed. (Secondary Education)

This master's degree is designed for students with a bachelor's degree in English, mathematics, science (physics, biology, chemistry), social sciences (history, political science, economics, psychology, sociology), or a foreign language who wish to earn an initial Wisconsin secondary (grades 6-12) teaching license. This licensure to master's program is aligned with the knowledge, skills and dispositions related to effective teaching and articulated in the Wisconsin State Teaching Standards for Licensure and Professional Development. Like Marquette's undergraduate teacher preparation program, this program prepares teachers to uphold the Jesuit traditions of care for the person, social justice, academic excellence, ethical behavior and service to the urban community. (See Application Requirements section for additional important information.)

Reading Certification

Certification programs are available for the Wisconsin Reading Teacher (316) and Reading Specialist (317) licenses. Licensed teachers who wish to add either of these licenses may do so in conjunction with the master of arts in curriculum and instruction.

PREREQUISITES FOR ADMISSION

Applicants should have graduated with, or be about to graduate with, a bachelor's or master's degree from an accredited institution appropriate to their chosen field of graduate study. The exceptional student applying to the doctoral program without a master's degree must complete an appropriate master's degree as part of his or her doctoral program requirements.

APPLICATION DEADLINE

January 15 Applicant files must be completed by this date for admission consideration to the doctoral program. Applicants will be notified by March 15.

Note: No official deadline exists for the master's degree and certificate programs.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation addressing the applicant's ability to do graduate-level work.
4. *(For specialist certificate and master's applicants only)* a personal statement of purpose that includes professional and academic goals.
5. *(For administrative leadership certificate applicants only)* proof of an earned master's degree.
6. *(For master's applicants only)* GRE scores (General Test only).
7. *(For doctoral applicants only)* GRE scores.
8. *(For doctoral applicants only)* a sample of scholarly writing, such as a master's thesis or a published article.
9. *(For doctoral applicants only)* a personal statement articulating research interests with professional aspirations.
10. *(For international applicants only)* a TOEFL score or other acceptable proof of English proficiency.

An interview and/or writing test may be required of applicants following the initial screening.

Teacher certification applicants are required to submit Praxis I and II scores to the School of Education's Office of Teacher Education. These applicants must also undergo a criminal background check, conducted by Marquette University. A second criminal background check is conducted at the state level when student teaching is completed, as part of the teacher license application.

Individuals submitting applications for administrative licenses must undergo a criminal background check, conducted by the state, when their administrative program is complete and they submit their administrative license application to the state.

TEACHER AND ADMINISTRATIVE CERTIFICATION APPLICANTS

All applicants seeking teacher certification or administrative certification must have transcripts evaluated by the School of Education BEFORE formally applying to the Graduate School for admission to any certificate program. Inquiries should be directed to the School of Education's Office of Teacher Education, Schroeder Complex, 150, P.O. Box 1881, Milwaukee, WI 53201-1881, (414) 288-7375.

Only upon approval of the department should students submit application materials to the Graduate School. Students seeking an advanced degree and certification must meet the criteria for both admission to the Office of Teacher Education and the Graduate School.

MASTER'S REQUIREMENTS

The master of arts degree in curriculum and instruction requires students to complete 30 credit hours of course work, complete research and leadership projects, and compose a capstone essay. The master of education degree requires students to complete 33 credit hours of course work and complete a leader-

ship portfolio and/or professional project. The master of arts degree in educational leadership requires students to complete 27 credit hours of course work, six credit hours of thesis work (EDPL 299), pass a comprehensive examination, and defend an approved thesis.

A master's program is arranged in consultation with the adviser named in the student's letter of admission from the Graduate School. The program of study should be submitted for approval to the director of graduate studies no later than the end of the second term. Where licensure is involved, the program is designed to meet Wisconsin requirements.

DOCTORAL REQUIREMENTS

The doctoral program in educational policy and leadership is designed to foster the development of scholar-practitioners. It asks students not only to inquire deeply into the process of teaching and learning, but also how the organization of schooling shapes this process. In addition, the program asks students to acquire adjacent disciplinary strengths that provide contexts for considering what knowledge is of most worth, how forms of knowledge are socially distributed, and what educational measures might help bring about a more just society. Students are expected to gain expertise in research that will enable them to contribute to the ways we think about education, and they are expected to develop technological and other practical skills that will enable them to implement strategies for change.

A doctoral student must complete a program of study prepared in consultation with his or her adviser. Each program of study must include a minimum of 45 credit hours of course work beyond the master's degree (at least 33 of which must be in the School of Education), plus a minimum of 12 credit hours of work on a dissertation. A doctoral program (with a specialization in educational leadership or instructional leadership) must contain the following elements:

1. Nine (9) credit hours of doctoral seminars.
 - EDPL 330 Seminar 1: Social Contexts and Educational Policy
 - EDPL 331 Seminar 2: Social Contexts and Educational Policy
 - EDPL 365 Seminar 3: Canons and Conversations
2. Twelve (12) credit hours of foundation courses (at least two of the following four courses, including EDPL 349).
 - EDPL 337 Theories of Learning Applied to Instruction
 - EDPL 348 Classics in the Philosophy of Education
 - EDPL 349 History of Education in the United States
 - EDPL 355 Sociological Foundations of Education

Additional foundation courses can be selected from 200/300 level courses in areas such as curriculum, leadership, history, philosophy, sociology or psychology.

3. Twelve (12) credit hours in research. Three required courses:
 - EDPL 312 Multiple Paradigms in Educational Research
 - EDPL 315 Interpretive and Critical Research in Education 1
 - EDPS 275 Introduction to Statistics and at least one elective course.

4. Twelve (12) credits in a supportive elective sequence (approved by the student's adviser).
5. Twelve (12) credit hours of dissertation work.

Students interested in obtaining principal or superintendent licensure with the doctoral program will be required to complete additional course work.

Normally, no foreign language is required, unless, at the discretion of the student's adviser, proficiency in a foreign language is necessary in a student's research.

A doctoral student must pass both the written and oral parts of a qualifying examination (DQE) prior to the advancement to candidacy. This is normally taken after the completion of a minimum of 33 credit hours. Program faculty determines the format for the examination. A student's DQE committee (and dissertation committee, although these do not need to have the same membership) should include at least two faculty from the EDPL Department. The remaining members may be from outside the department with no more than one coming from outside the university. Students should select all committee members in consultation with their adviser.

The doctoral dissertation must represent an original research contribution and show high attainment and clear ability to do independent research. Students must successfully defend both their dissertation proposal and the final dissertation.

CERTIFICATE/LICENSURE REQUIREMENTS

Certificates in several fields involving graduate instruction are granted by the State Department of Public Instruction. The university's decisions on recommendations for certification are made by its Licensing Officer after appropriate consultations. In this process, professional judgments are exercised. Thus, while certain courses are normally specified for various certificates, any such requirements are a necessary but not sufficient condition for certification.

COURSE DESCRIPTIONS

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

Education (EDUC)

EDUC 104. Parenting and Family Issues
3 sem. hrs.

EDUC 109. Measurement in Education
3 sem. hrs.

EDUC 110. Teaching Elementary Reading, Language Arts and Children's Literature 1 4 sem. hrs.

EDUC 120. Teaching Elementary Reading, Language Arts and Children's Literature 2 4 sem. hrs.

EDUC 125. Literacy in the Content Areas
3 sem. hrs.

EDUC 128. Teaching in the Middle School
4 sem. hrs.

EDUC 145. Teaching Middle/Secondary Social Science 3 sem. hrs.

EDUC 155. Teaching Middle/Secondary Science 3 sem. hrs.

EDUC 158. Philosophy of Education
3 sem. hrs.

EDUC 165. Strategies in Religious Education 3 sem. hrs.

EDUC 192. Reading Instruction for School Service Personnel 3 sem. hrs.

EDUC 198. Special Topics in Education
1-4 sem. hrs.

GRADUATE COURSES:

Some courses, numbered at two levels, permit distinction of master's and doctoral enrollees with corresponding differences in course expectations to be specified by the instructor at the beginning of each course. Master's students will generally register for the 200-level designation, doctoral for the 300-level. Students should review this policy and its implications with their advisers early in the program. Some 100-level courses have been approved for graduate credit. These courses are designated in the *Schedule of Classes* with the comment "Course May Carry Grad Credit."

Educational Policy and Leadership (EDPL)

EDPL 200. Theory and Practice of Educational Leadership 3 sem. hrs.

Contemporary theories of organizational behavior and administration and their applications to schools. Educational governance and leadership. Offered annually. To be taken toward the beginning of program.

EDPL 201. Motivation and Human Relations in Educational Leadership 3 sem. hrs.

Theoretical and practical dimensions of human relations in educational organizations. Human motivation, communication, interpersonal, and group skills.

EDPL 202. Politics and Community Relations in Educational Organizations
3 sem. hrs.

Theoretical and practical dimensions of the sociocultural, economic and political forces affecting educational organizations and how educational leaders can respond and interact with them. Offered annually.

EDPL 203. Business Administration of the Educational Organization 3 sem. hrs.

The various business management support functions and their impact on the delivery of educational services. School finance, theories of taxation, legislative and judicial context for school business management, human resource management and employee contract administration, information management systems and technology, budget planning, facilities management, and related topics.

EDPL 205. American Law and the Educational Organization 3 sem. hrs.

The legal basis for American education: constitutional interpretations; court decisions and legislation affecting schools and school systems;

tort liability; contracts; civil rights; teacher and student rights and responsibilities; church/state issues; school property and finance; legal aspects of special education. Offered annually.

EDPL 206. The Principalship 3 sem. hrs.
Leadership of the individual school. Operational tasks of the principal including policy formation, implementation, coordination, and evaluation of the general and special instructional programs. Leadership roles of the principal in regard to faculty, students, parents, and community. Offered annually.

EDPL 208. Practicum in Educational Leadership 3 sem. hrs.

Field application relating educational leadership theory to applied practice of educational leadership in a university-approved elementary, secondary, or higher education setting. Participation in an on-campus seminar is required. Offered annually. S/U grade assessment. *Prereq: Cons. of dept.; 18 hours of educational leadership courses.*

EDPL 209. Leadership Foundations of Private Education 3 sem. hrs.

Historical, philosophical, sociological, political and theological foundations of education for both sectarian and non-sectarian schools. Implications for a variety of leadership models. Offered occasionally.

EDPL 210. Current Issues in Educational Policy and Leadership 3 sem. hrs.

Critical analysis and discussion of significant issues confronting the contemporary educational leader. Capstone course in educational leadership master's program. Offered annually. *Prereq: Cons. of dept.; at least 24 credits in educational leadership.*

EDPL 215. Using Technologies for Instruction and Assessment 3 sem. hrs.

Survey of instructional technologies that enhance instructional planning, learning, and assessment across the curriculum. Copyright, fair use, and equity issues relating to technology in education. Offered annually.

EDPL 220. Introduction to Educational Inquiry 3 sem. hrs.

Multiple approaches to educational research are explored with emphasis on reading, critiquing and using research to inform school practice. Skills in participant observation and interviewing for use in practitioner research are developed. Offered annually.

EDPL 221. Intermediate Inquiry Methods
3 sem. hrs.

Practice in designing and conducting group practitioner research. Reading and conducting literature reviews. Introduction to data collection and analysis. Offered annually. *Prereq: EDPL 220, EDPL 234, EDPL 237 and cons. of dept.*

EDPL 222. Advanced Inquiry Methods
3 sem. hrs.

Practice in designing, conducting, writing and presenting a practitioner-initiated research project. Implications of teacher research for curriculum, pedagogy, leadership, and school reform. Offered annually. *Prereq: Cons. of dept.*

EDPL 223. Teacher as Leader 3 sem. hrs.

Survey of leadership theories and roles for teachers in schools. Skill development in group

dynamics, motivation, communication and human relations. The teacher leader in relation to organizational change, decision-making, team-building and moral leadership. Offered fall and spring terms. Available online annually. *Prereq: EDPL 222 which may be taken concurrently.*

EDPL 234. Foundations of Curriculum
3 sem. hrs.

Historical, philosophical, sociocultural, political, and economic forces which shape curriculum development and change. Theories of curriculum. Skill development in curricular planning and evaluation. Offered annually.

EDPL 237. Theories of Learning Applied to Instruction 3 sem. hrs.

Survey of major theories of learning. Use of learning theory to analyze and critique curriculum and design learner-centered instruction and assessments. Offered annually.

EDPL 238. Seminar: Analysis of Teaching
3 sem. hrs.

Use of current theories and research on teaching to examine and assess teaching practice. Offered annually. *Prereq: EDPL 234, EDPL 237.*

EDPL 240. Supervision of Instruction
3 sem. hrs.

Models of supervision. Use of supervision to improve instruction. Developing the supervision program. Supervisory techniques. Evaluation in supervision. Offered annually.

EDPL 241. Supervision of Student Teaching
3 sem. hrs.

The role of the supervising teacher in student teaching or internship programs. Attention will be given to the development of understanding, attitudes, and skills essential in working effectively with student teachers to facilitate the improvement of instruction. Offered occasionally. *Prereq: Three years of teaching experience.*

EDPL 242. The Theory and Design of Curriculum 3 sem. hrs.

Exploration, applications, and critique of current models of curriculum design. Emphasis on curricular decision-making and implementation at the school or district level. Offered alternate years. *Prereq: EDPL 234 or EDPL 334.*

EDPL 244. 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.

EDPL 245. Differentiation of Instruction for Exceptional Learners 3 sem. hrs.

Introduction to theories and educational practices that help teachers to adapt instruction to meet the needs of students with exceptional educational needs.

EDPL 248. Classics in the Philosophy of Education 3 sem. hrs.

Selected texts from a number of ancient and contemporary thinkers significant in the philosophical and educational tradition. Analysis of

ramifications for current educational theory and practice. Offered every other year.

EDPL 249. History of Education in the United States 3 sem. hrs.

The origins and development of American education: roots, aims, organization, curriculum, methods, and challenges. The ideal of the Common School. The school as social laboratory. Offered annually.

EDPL 250. History of Higher Education in the United States 3 sem. hrs.

Basic history of the American college and university. Colonial foundations, private and state-controlled institutions, professional, technical, and graduate studies. Recent trends and issues in higher education. Offered alternate years.

EDPL 251. Education and the Philosophy of Instrumentalism 3 sem. hrs.

An examination and critique of the philosophy of John Dewey, his precursors and his successors. Offered occasionally.

EDPL 252. Contemporary Philosophies of Education 3 sem. hrs.

Contemporary philosophical approaches to educational problems and issues, including pragmatist, analytic, existentialist, phenomenological, critical, hermeneutic, postmodern, and feminist. Offered occasionally.

EDPL 254. Comparative Education
3 sem. hrs.

A comparison of the most typical educational systems in Europe, Asia, and America, pointing out the basic differences in such areas as objectives, curricula, and teaching methods. Offered occasionally.

EDPL 255. Sociological Foundations of Education 3 sem. hrs.

Those aspects of the science of sociology and social anthropology which help the student to understand the individual as a member of society. Education and the school in the social structure. Offered every other year.

EDPL 256. Catholic Theology and Education
3 sem. hrs.

History of philosophical theology in the Catholic tradition and its bearing upon educational theory and practice. Investigation into theological methods and principles and their implications for education through an examination of the thought of selected individuals representative of the Catholic heritage. Attention to such theologians as St. Augustine, St. Thomas Aquinas, St. Bonaventure, Duns Scotus, Newman, Rahner, and Lonergan. Specific problems confronting Catholic education today. Offered occasionally.

EDPL 257. Religious Education in the West
3 sem. hrs.

Philosophical and theological analysis of religious education in the history of western civilization. Focus upon significant religious educators and certain problems indigenous to religious formation. Contemporary issues and future directions of religious education, especially in the United States. Offered occasionally.

EDPL 258. Current Problems in American Higher Education 3 sem. hrs.

Examination of current issues in higher education and the assumptions underlying various positions on those issues. Offered occasionally.

EDPL 259. Introduction to Student Affairs
3 sem. hrs.

Historical, philosophical and theoretical foundations of the field of student affairs in higher education in the United States. Roles and functions of various student affairs divisions and how they contribute to purposes of post-secondary education. Current issues in the field. Offered annually.

EDPL 260. Foundations of Instructional Technology 3 sem. hrs.

Historical and current theoretical perspectives on use of technologies in classrooms. Evaluation and use of various educational applications of technology in curricular design. Emerging technologies and current trends in online education. Ethical, legal, cultural and research issues in current uses of instructional technology.

EDPL 261. Design Issues in Technology and Instructional Systems 3 sem. hrs.

Application of concepts, issues, processes, theories, and techniques of instructional design will be explored in a variety of electronic learning contexts including instructional modules, Web-based courses, computer graphics, and educational software.

EDPL 262. Facilitating a Web-Based Course
3 sem. hrs.

Research-based methods and techniques for building effective online learning communities, including facilitation of structured dialogue and interaction, reflection, critical thinking, collaboration, and active engagement in the learning process. Offered every other year.

EDPL 263. Theories and Research in Instructional Technology 3 sem. hrs.

Survey of recent research developments and theoretical frameworks in the field, focusing on current cognitive and social constructivist theories. Students design individual research projects in areas of interest. Offered every other year.

EDPL 265. Special Topics in Creative Education 2 sem. hrs.

A graduate-level course in selected areas of art, design and technology, with applications for K-12 or college classrooms. Offered at the Milwaukee Institute of Art and Design in a one-week residency. Topics vary and will be designated in the summer *Schedule of Classes*. Offered annually during the month of July.

EDPL 270. Faculty Roles in Higher Education 3 sem. hrs.

Seminar aimed at students planning academic careers in higher education. Focus on changes in traditional dimensions of teaching, research, and service in light of current research on teaching and learning; corporate influences on higher education; and current critiques of higher education.

EDPL 271. Designing and Teaching Effective Courses in Higher Education
3 sem. hrs.

Seminar aimed at students planning academic careers in higher education. Focus on planning, delivering, and evaluating courses in higher education that produce significant student learning in light of current advances in cognitive science relevant to teaching and learning.

EDPL 272. Diverse Students on the College Campus 3 sem. hrs.

Research and theoretical perspectives on multiculturalism and diversity issues in higher education. Course focuses on how race, ethnicity, gender, age, sexual orientation, disability, religion, socioeconomic status, and national origin impact the college setting. Offered every other year.

EDPL 283. Literacy and Children's Literature for the Primary Grades 3 sem. hrs.

Theory and practice in teaching reading, language arts, and children's literature from a developmental perspective to diverse lower elementary learners. Offered annually. Online only.

EDPL 284. Literacy and Children's Literature for the Intermediate Grades 3 sem. hrs.

Theory and practice in teaching reading, language arts, and children's literature from a developmental perspective to diverse upper elementary learners. Offered annually. Online only.

EDPL 285. Literature for Children and Adolescents 3 sem. hrs.

History and survey of literature for children and adolescents. Theoretical study and practical application of reader response, literary analysis, and current topics in the field of literature for children and young adults. Offered occasionally.

EDPL 286. Literacy Assessment and Instruction 3 sem. hrs.

Developmental theory of assessment and instruction with experience conducting assessment and planning of instruction to meet individual literacy needs of children and young adults. Offered annually. *Prereq: EDUC 110 and EDUC 120.*

EDPL 288. Practicum: Literacy Assessment and Instruction 3 sem. hrs.

A practicum involving assessment and instruction of K-12 students at varying stages of reading development. Offered annually. *Prereq: EDPL 286 and cons. of dept.*

EDPL 289. Supervision and Administration of Reading Programs 3 sem. hrs.

Analysis and evaluation of instructional programs in reading. Emphasis on aiding teachers and administrators in planning, organizing and implementing effective reading programs. Methods for involving parents and the community in developing and implementing the reading program. Offered occasionally. *Prereq: EDPL 288 and EDPS 261.*

EDPL 290. Psychology of Reading Instruction 3 sem. hrs.

Theory and research in the psychological processes underlying word recognition and comprehension processes. Attention is also given to individual differences in readers abilities. Offered occasionally. *Prereq: EDUC 110 and EDUC 120; or EDPL 286 or equiv. and EDUC 125.*

EDPL 291. Practicum in the Supervision and Administration of K-12 Reading Programs 1-3 sem. hrs.

The practicum, based in school settings, will include experiences in the supervision and administration of K-12 reading programs, under

the supervision of a school reading supervisor and a university supervisor. Experiences may include supervision of teachers of reading, coordination of components of reading programs (e.g., selection of materials, tests, etc.), and development of in-service programs. Offered occasionally. S/U grade assessment. *Prereq: EDPL 289.*

EDPL 294. Seminar on Topics in Educational Policy and Leadership 1-6 sem. hrs.

Graduate seminars on current topics in leadership and supervision of interest to the professional educator. Usually offered bi-annually. S/U grade assessment.

EDPL 295. Independent Study 1-3 sem. hrs.

Provides graduate students opportunities to investigate and study areas of interest through readings, research, field experience, projects, and/or other educational activities under the direction of a faculty adviser. Offered every term. *Prereq: Cons. of instr. and cons. of dept. ch.; It should be noted that graduate students seeking independent study opportunities must complete an approval form signed by the dept. ch. or his or her designated representative.*

EDPL 298. Special Topics in Educational Policy and Leadership 1-3 sem. hrs.

In-depth study of educational concepts and theories in a broad area which, because of their topicality, are not the subject of a regular course. The special topics will be designated in the *Schedule of Classes*. Offered occasionally.

EDPL 299. Master's Thesis 1-6 sem. hrs.

Master's thesis for master's candidates. Offered every term. *Prereq: Cons. of dept. and cons. of instr.*

EDPL 300. Theory and Practice of Educational Leadership 3 sem. hrs.

Contemporary theories of organizational behavior and administration and their applications to schools. Educational governance and leadership. Offered annually. To be taken toward the beginning of program.

EDPL 301. Motivation and Human Relations in Educational Leadership 3 sem. hrs.

Theoretical and practical dimensions of human relations in educational organizations. Human motivation, communication, interpersonal, and group skills.

EDPL 302. Advanced Politics and Community Relations in Educational Organizations 3 sem. hrs.

Advanced study of theoretical and practical dimensions of the sociocultural, economic and political forces affecting educational organizations and how educational leaders can respond and interact with them. Offered annually.

EDPL 303. Advanced Theory and Practice in Educational Finance 3 sem. hrs.

Study of school finance from theoretical, legal, and political perspectives.

EDPL 304. Advanced Program Planning and Evaluation in Educational Settings 3 sem. hrs.

Exploration of theories, models, and current practices in leadership, planning, and assessment within educational organizations.

EDPL 305. American Law and the Educational Organization 3 sem. hrs.

The legal basis for American education: constitutional interpretations; court decisions and legislation affecting schools and school systems; tort liability; contracts; civil rights; teacher and student rights and responsibilities; church/state issues; school property and finance; legal aspects of special education. Offered annually.

EDPL 306. The Superintendency 3 sem. hrs.

Leadership of the school district system. The roles played by the superintendent: board chief operating officer, visionary, motivator, risk-taker, communicator, lobbyist, etc. Offered alternate years. *Prereq: Master's degree and principal's certification.*

EDPL 307. Advanced Personnel Leadership 3 sem. hrs.

Comprehensive study of personnel services in the educational setting, including recruitment, selection, compensation, staff development, collective bargaining, and employee contract administration. Offered occasionally. *Prereq: Cons. of dept.*

EDPL 308. Advanced Practicum in Educational Leadership 3 sem. hrs.

Field application relating educational administrative theory to the applied practice of educational administration at the system or college level. Participants must be in a university-approved setting and must participate in an on-campus seminar. Offered annually. S/U grade assessment. *Prereq: Cons. of dept.*

EDPL 309. Leadership Foundations of Private Education 3 sem. hrs.

Historical, philosophical, sociological, political and theological foundations of education for both sectarian and non-sectarian schools. Implications for a variety of leadership models. Offered occasionally.

EDPL 310. Current Issues in Educational Policy/Leadership for the District Administrator 3 sem. hrs.

Guided research and discussion of significant issues confronting educational leaders. Offered occasionally.

EDPL 312. Multiple Paradigms in Educational Research 3 sem. hrs.

Situates educational research and knowledge within a philosophy of science framework. Students will examine a range of competing epistemologies, alternative ways of knowing the world, and explore how each, in turn, shapes and is shaped by the practice of education. The course is organized around three active paradigms: empirical-analytic, interpretive and critical. Students will explore the implications of these paradigms for critiquing, conceptualizing and conducting research in education.

EDPL 314. Seminar: Leadership in Higher Education 3 sem. hrs.

Development of the identity, aims, and practices of higher education in the United States. Internal administration; collegial functions and responsibilities of administration, faculty and students. Offered occasionally. *Prereq: Cons. of dept.; 18 hours of educational leadership.*

EDPL 315. Interpretive and Critical Research in Education 1 3 sem. hrs.

Theory and rationale of qualitative research methods in the social sciences. Historical research, case studies, field studies, non-invasive approaches. Data gathering and analysis procedures. Offered alternate years. *Prereq: EDPL 312 or equiv.*

EDPL 316. Advanced Field Study in**Educational Leadership** 3 sem. hrs.

Advanced field study in the practical concerns of the on-going administration of the educational organization or system. Offered occasionally. S/U grade assessment.

EDPL 318. Interpretive and Critical Research in Education 2 3 sem. hrs.

Building on the understanding and skills developed in EDPL 312 and interpret and present in written and oral forms, a course-long research project. The paradigmatic assumptions and practice of interpretive and critical work are explored to develop a holistic understanding and critique of educational settings. Students work-in-progress will structure the organization of the course. A range of research issues and problems are addressed as they emerge. Offered alternate years. *Prereq: EDPL 312 and EDPL 315 or equiv.*

EDPL 330. Seminar 1: Social Contexts and Educational Policy 3 sem. hrs.

Trains historical and sociological lenses on matters of race, class and culture in order to engender thinking about how curricular practices and supporting policies might contribute to equity in education. First course in the doctoral program.

EDPL 331. Seminar 2: Social Contexts and Educational Policy 3 sem. hrs.

With an emphasis on equity, examines competing conceptions of pedagogy and key contentions over what constitutes the proper cultural content of curriculum. Also considers curricular and instructional implications of alternative policies of school governance and demographics. Second course in the doctoral program.

EDPL 334. Foundations of Curriculum 3 sem. hrs.

Historical, philosophical, sociocultural, political, and economic forces which shape curriculum development and change. Theories of curriculum. Skill development in curricular planning and evaluation. Offered annually.

EDPL 335. Seminar: Research on Teacher Education 3 sem. hrs.

Study and analysis of current research on preparation and professional development of teachers. *Prereq: EDPL 237 or EDPL 337.*

EDPL 337. Theories of Learning Applied to Instruction 3 sem. hrs.

Survey of major theories of learning. Use of learning theory to analyze and critique curriculum and design learner-centered instruction and assessments. Offered annually.

EDPL 338. Seminar: Analysis of Teaching 3 sem. hrs.

Use of current theories and research on teaching to examine and assess teaching practice. Offered annually. *Prereq: EDPL 334, EDPL 337.*

EDPL 340. Supervision of Instruction 3 sem. hrs.

Models of supervision. Use of supervision to improve instruction. Developing the supervision program. Supervisory techniques. Evaluation in supervision. Offered annually.

EDPL 341. Supervision of Student Teaching 3 sem. hrs.

The role of the supervising teacher in student teaching or internship programs. Attention will be given to the development of understanding, attitudes, and skills essential in working effectively with student teachers to facilitate the improvement of instruction. Offered occasionally. *Prereq: Three years of teaching experience.*

EDPL 342. The Theory and Design of Curriculum 3 sem. hrs.

Exploration, applications and critique of current models of curriculum design. Emphasis on curricular decision-making and implementation at the school or district level. Offered alternate years. *Prereq: EDPL 234 or EDPL 334.*

EDPL 345. Field Study in Curriculum Development 3 sem. hrs.

Field study of the practical problems of curriculum planning, improvement and development in approved school settings. Forty clock hours of school experience approved by the School of Education over a period of no less than eight weeks. Supplemented by conferences, preparatory, and evaluative meetings as needed. Detailed anecdotal report required. Offered occasionally. S/U grade assessment. *Prereq: EDPL 334 and cons. of dept. ch.; cons. of adviser.*

EDPL 348. Classics in the Philosophy of Education 3 sem. hrs.

Selected texts from a number of ancient and contemporary thinkers significant in the philosophical and educational tradition. Analysis of ramifications for current educational theory and practice. Offered every other year.

EDPL 349. History of Education in the United States 3 sem. hrs.

The origins and development of American education: roots, aims, organization, curriculum, methods, and challenges. The ideal of the Common School. The school as social laboratory. Offered annually.

EDPL 350. History of Higher Education in the United States 3 sem. hrs.

Basic history of the American college and university. Colonial foundations, private and state-controlled institutions, professional, technical, and graduate studies. Recent trends and issues in higher education. Offered alternate years.

EDPL 351. Education and the Philosophy of Instrumentalism 3 sem. hrs.

An examination and critique of the philosophy of John Dewey, his precursors and his successors. Offered occasionally.

EDPL 352. Contemporary Philosophies of Education 3 sem. hrs.

Contemporary philosophical approaches to educational problems and issues, including pragmatist, analytic, existentialist, phenomenological, critical, hermeneutic, postmodern, and feminist. Offered occasionally.

EDPL 354. Comparative Education 3 sem. hrs.

A comparison of the most typical educational systems in Europe, Asia, and America, pointing out the basic differences in such areas as objectives, curricula, and teaching methods. Offered occasionally.

EDPL 355. Sociological Foundations of Education 3 sem. hrs.

Those aspects of the science of sociology and social anthropology which help the student to understand the individual as a member of society. Education and the school in the social structure. Offered every other year.

EDPL 356. Catholic Theology and Education 3 sem. hrs.

History of philosophical theology in the Catholic tradition and its bearing upon educational theory and practice. Investigation into theological methods and principles and their implications for education through an examination of the thought of selected individuals representative of the Catholic heritage. Attention to such theologians as St. Augustine, St. Thomas Aquinas, St. Bonaventure, Duns Scotus, Newman, Rahner, and Lonergan. Specific problems confronting Catholic education today. Offered occasionally.

EDPL 357. Religious Education in the West 3 sem. hrs.

Philosophical and theological analysis of religious education in the history of western civilization. Focus upon significant religious educators and certain problems indigenous to religious formation. Contemporary issues and future directions of religious education, especially in the United States. Offered occasionally.

EDPL 358. Current Problems in American Higher Education 3 sem. hrs.

Examination of current issues in higher education and the assumptions underlying various positions on those issues. Offered occasionally.

EDPL 360. Seminar: Current Topics in Educational Policy Studies 3 sem. hrs.

Offered alternate years. *Prereq: Eighteen hours of graduate education.*

EDPL 365. Canons and Conversations: Seminar 3 3 sem. hrs.

A study of major scholarly works that look at education from disciplines that include anthropology, history, philosophy and sociology. Prepares students for the qualifying examination. S/U grade assessment. *Prereq: Thirty three hours of doctoral course work.*

EDPL 390. Advanced Theory of Educational Leadership 3 sem. hrs.

Doctoral seminar. Current critical approaches to the formulation of theories of educational administration. The broadening of empirical approaches. The culture of schools and colleges. Offered occasionally.

EDPL 391. Advanced Research in Educational Leadership 3 sem. hrs.

Doctoral seminar. Current trends in research treating educational administration. Student focus on exploratory or pilot study related to the doctoral dissertation. Offered occasionally.

EDPL 394. Internship in Educational Policy and Leadership Studies 3-6 sem. hrs.

Supervised experiences in educational policy and leadership. Internships must be identified and planned by the student with an appropriate faculty member. Supervision should normally be by a School of Education faculty member. Each individual internship plan must be approved by the dean or his or her designee. Offered annually. S/U grade assessment.
Prereq: Cons. of instr.; post-master's stdng.; on program at Marquette.

EDPL 399. Doctoral Dissertation

1-12 sem. hrs.

Doctoral dissertation for doctorate in philosophy candidates. Offered every term.

Prereq: Cons. of dept.; cons. of instr.

EDPL 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.

Fee. S/U grade assessment.

Prereq: Cons. of dept. ch.

EDPL 892. Continuous Enrollment — Half-Time 0 sem. hrs.

Fee. S/U grade assessment.

Prereq: Cons. of dept. ch.

EDPL 893. Continuous Enrollment — Full-Time 0 sem. hrs.

Fee. S/U grade assessment.

Prereq: Cons. of dept. ch.

EDUCATIONAL PSYCHOLOGY (EDPS)

See **COUNSELING AND EDUCATIONAL PSYCHOLOGY (COEP)**

ELECTRICAL AND COMPUTER ENGINEERING (EECE)

Chairperson and Professor: Yaz
Associate Chairperson, Associate Professor and Electrical Engineering Curriculum Coordinator: Schneider
Associate Professor and Computer Engineering Curriculum Coordinator: Riedel
Professor and Director of Graduate Studies: Josse
Professor Emeritus and Director of Undergraduate Studies: Moeller
Adjunct Associate Professor and Director of Undergraduate Electrical Engineering Laboratories: Jacoby
Assistant Professor and Director of Undergraduate Computer Engineering Laboratories: Povinelli
Professor: Arkadan (Research), Corliss, Demerdash, Heinen (Emeritus), Heinrich, Hock (Emeritus), Ishii (Emeritus), Jaskolski, Jeutter, Joshi, Seitz
Associate Professor: Brown, Feng, Richie
Assistant Professor: Johnson
Adjunct Professor: Datskos, Pistré
Adjunct Associate Professor: Davis, Schmidt
Adjunct Assistant Professor: Deibele, Kelnhofer, Perez
Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREES OFFERED

Master of Science; Doctor of Philosophy

MISSION STATEMENT

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, research that advances the frontiers of technical and scientific knowledge, and service to professional and civic communities.

SPECIALIZATIONS

The Electrical and Computer Engineering Program does not offer formal specializations; however, students may focus their course work in one or more of the following areas.

Antennas and Propagation, Computational and Artificial Intelligence, Control Systems, Electric Drives and Power Electronics, Materials Science, Microwaves, Nonlinear Dynamics, Power Systems and Devices, Signal Processing, Smart Sensor Systems, Solid-state and Acoustic Wave Device Sensors (Biochemical Sensors and Biosensors)

PROGRAM DESCRIPTIONS**CERTIFICATE PROGRAMS**

In addition to its master's and doctoral programs, the Department of Electrical and Computer Engineering offers non-degree graduate certificate programs in the following technical areas.

Applied Solid-state Electronics
Computers and Signal Processing
Electric Machines, Drives, and Controls
Microwaves and Antennas
Solid-state Device Sensors

Certificate programs in other technical areas can be developed and completed with the aid of an academic adviser subject to department approval.

The certificate programs are designed for practicing engineers and other qualified individuals with bachelor's degrees who wish to update and/or expand their knowledge in specific technical areas, but do not necessarily wish to pursue a master's or doctoral degree.

DEGREE PROGRAMS

The master of science and doctor of philosophy degree programs are designed to provide graduate students with both broad fundamental knowledge and up-to-date information on current and emerging technologies. Students may enroll on either a full-time or part-time basis (with the exception of the one-year residency requirement for doctoral students). Doctoral students and research-oriented master's students engage in research activities under the close supervision of their advisers, gradually learning to become independent researchers. Their projects often are supported by government and industry grants. Courses and research activities make significant use of the department's extensive laboratory and computer facilities. Graduates find employment in industry, research facilities, government, and academia.

PREREQUISITES FOR ADMISSION

Applicants should have graduated with, or be about to graduate with, a baccalaureate degree in an appropriate area of study from an accredited institution.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation.
4. *(For doctoral applicants only)* a brief statement of purpose and copies of any published work, including master's theses and essays.
5. *(For international applicants only)* a TOEFL score or other acceptable proof of English proficiency.
6. *(For non-degree certificate applicants only)* a certificate course work planning form, prepared in consultation with an adviser from the department.
7. *(For doctoral and all international applicants)* GRE scores (General Test only).
8. The GRE also is recommended for, and may be requested of, master's applicants with undergraduate grade point averages less than 3.00 out of 4.00.

GENERAL INFORMATION

All admitted students are required to obtain and read the department's *Graduate Student Handbook*, which contains complete details about the electrical and computer engineering programs and additional departmental degrees. This handbook is available through the Electrical and Computer Engineering Office, (414) 288-6820.

BACHELOR'S-MASTER'S PROGRAM

This program allows students to earn both their master of science degree in electrical and computer engineering and a bachelor of science degree in just five years. Students currently enrolled in the undergraduate electrical and computer engineering program at Marquette University (with a G.P.A. of 3.50 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.

Students may take master's level courses in their senior undergraduate year. These graduate courses count towards both the undergraduate and graduate degrees. A maximum of six credits will be allowed toward both degrees. The remaining courses are taken during the students' fifth year. For students following Plan A, work on the thesis research should ideally begin the summer between the junior and senior years. Students will continue to gain research experience during the summer between the senior and fifth year, continuing through the final year, culminating in preparation of a written thesis and defense. Master's degree programs following Plan B (course option) can also be completed in five years.

CERTIFICATE REQUIREMENTS

Each graduate certificate program requires completion of four courses (12 credits) selected from a prescribed list of courses pertinent to the area of study. All courses taken must be approved for graduate credit, and at least two of the courses must be strictly graduate level (courses numbered 200 or above). Students must complete all courses within a three-year time period and must earn a grade point average of at least 3.00 with no grade below a C.

MASTER'S REQUIREMENTS

All master's students must successfully complete, early in their programs of study, two required courses: EECE 205 Advanced Engineering Mathematics, and EECE 206 Probability and Random Processes in Engineering.

A master's student may pursue either a thesis program or a non-thesis program. In Plan A (thesis option), a student must complete 24 credit hours of course work, plus six credit hours of thesis work, submit an approved thesis, and pass a final oral comprehensive examination (thesis defense). In Plan B, (course option), a student must complete 36 credit hours of course work. In both plans, at least one-half of the total course work requirement must be strictly in 200-level courses. In Plan B at least 24 credit hours must be in electrical and computer engineering course work. The remaining 12 credits must be approved courses in either biomedical, civil, and/or mechanical engineering, or they must be an approved combination of at least one engineering course plus courses in chemistry, mathematics/statistics/computer science, and/or physics.

Master's students are normally admitted into Plan B. They may transfer, or may be required to transfer as a condition of financial support, to the more research-oriented Plan A with permission from their advisers, the department chairperson, and the Graduate School.

DOCTORAL REQUIREMENTS

All doctoral students must successfully complete, early in their programs of study, two required courses: EECE 205 Advanced Engineering Mathematics, and EECE 206 Probability and Random Processes in Engineering.

A doctoral student must complete a program of study prepared in consultation with his or her dissertation adviser and outlined on an approved *Doctoral Program Planning Form*. The program normally requires 60 credit hours of course work beyond the bachelor's degree, plus 12 credit hours of dissertation work. The student also must pass the doctoral qualifying examination (DQE) and submit and successfully defend a dissertation. The doctoral dissertation must represent an original research contribution and must show high attainment and clear ability to do independent research.

COURSE DESCRIPTIONS

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

Computer Engineering (COEN)

COEN 130. Introduction to Intelligent Systems 3 sem. hrs.

COEN 131. Introduction to Neural Networks and Fuzzy Systems 3 sem. hrs.

COEN 133. Evolutionary Computation 3 sem. hrs.

COEN 150. Database Applications 3 sem. hrs.

COEN 151. Introduction to Computer Graphics 3 sem. hrs.

COEN 157. Digital Signal Processing 3 sem. hrs.

COEN 164. Integrated Microelectronic Circuits 3 sem. hrs.

COEN 167. Topics in Computer Software 3 sem. hrs.

COEN 168. Topics in Computer Hardware 3 sem. hrs.

COEN 171. Computer Hardware 3 sem. hrs.

COEN 173. Computer Architecture 3 sem. hrs.

COEN 181. Object-Oriented Software Engineering 3 sem. hrs.

COEN 182. Introduction to Algorithms 3 sem. hrs.

COEN 183. Operating Systems and Networking 3 sem. hrs.

COEN 190. Modern Programming Practices 3 sem. hrs.

COEN 191. Software Testing 3 sem. hrs.

COEN 192. Computer Security 3 sem. hrs.

Electrical and Computer Engineering (EECE)

EECE 150. Control Systems 3 sem. hrs.

EECE 151. Topics in Computers and Control 3 sem. hrs.

EECE 152. Introduction to Communication Systems 3 sem. hrs.

EECE 153. Digital Control Systems 3 sem. hrs.

EECE 157. Digital Signal Processing 3 sem. hrs.

EECE 160. Electrical Properties of Solids 3 sem. hrs.

EECE 161. Dielectric Properties of Material 3 sem. hrs.

EECE 162. Device Electronics 3 sem. hrs.

EECE 164. Integrated Microelectronic Circuits 3 sem. hrs.

EECE 165. Design with Analog Integrated Circuits 3 sem. hrs.

EECE 166. Surface Acoustic Wave Devices 3 sem. hrs.

EECE 168. Topics in Electrical Engineering 3-4 sem. hrs.

EECE 173. Optical Fiber Communications 3 sem. hrs.

EECE 174. Antenna Theory and Design 3 sem. hrs.

EECE 175. Wireless Communications 3 sem. hrs.

EECE 176. Sensor Devices: Theory, Design and Applications 3 sem. hrs.

EECE 181. Power Electronics 3 sem. hrs.

EECE 182. Power Systems 3 sem. hrs.

EECE 183. Special Topics in Power Systems and Devices 3 sem. hrs.

EECE 184. Applied Finite Elements in Electromagnetics 3 sem. hrs.

EECE 185. Design and Analysis of Electric Motors in Adjustable Speed Drives 3 sem. hrs.

EECE 186. Principles of Design of Power Systems Protection and Monitoring 3 sem. hrs.

EECE 187. Electrical Transients and Surges in Power Systems and Devices 3 sem. hrs.

GRADUATE COURSES:

Computer Science and Engineering (CSEN)

CSEN 298. Topics in Computing 1-3 sem. hrs.

Course content announced prior to each offering. Students may enroll in the course more than once because subject matter changes. Topics may include: foundations of computation, net-centric computing, programming languages, intelligent systems, operating systems, information management, computational applications, computer architecture, software engineering, and related topics. May be offered out-of-state. *Prereq: Cons. of instr.*

Electrical and Computer Engineering (EECE)

EECE 201. Advanced Electromagnetic Fields

3 sem. hrs.

Solutions of Laplace and Poisson equations arising from electro and magneto static field configurations. Separation of variables, numerical relaxation, and conformal mapping techniques. Offered alternate years.

Prereq: EECE 121.

EECE 202. Electromagnetic Theory

3 sem. hrs.

Review of Maxwell's equations and waves in dielectric and lossy media; image theory, induction theorem and Green's function. Plane, cylindrical and spherical wave functions; radiation and antennas; rectangular, cylindrical waveguides and cavities; spherical cavities. Perturbation and variation techniques and moment techniques. Offered occasionally.

Prereq: EECE 122.

EECE 205. Advanced Engineering Mathematics

3 sem. hrs.

Linear algebra and matrix theory, ordinary differential equations, partial differential equations, and complex variables emphasizing both theoretical and numerical aspects as well as engineering applications. Offered every fall.

Prereq: MATH 83 or equiv.; proficiency in computer programming.

EECE 206. Probability and Random Processes in Engineering

3 sem. hrs.

Probability, random variables, statistics, and random processes, emphasizing both theoretical and numerical aspects as well as engineering applications. Offered every spring.

Prereq: MATH 83 or equiv.; proficiency in computer programming.

EECE 207. Advanced Course in Computers 1

3 sem. hrs.

Mathematics, image processing, signal processing, image reconstruction, and imaging systems in medical imaging applications. Offered every fall at the General Electric Medical Systems facility. *Prereq: Cons. of instr.; GE employee.*

EECE 208. Advanced Course in Computers 2

3 sem. hrs.

Problem solving methodology, software engineering tools and environment (typical topics: UNIX, C, data structures, object oriented paradigm, programming strategies), and hardware engineering tools (typical topics: analog and digital CAD, PALs, VME, applications). EECE 208 and EECE 211 may not both be used to meet degree requirements. Offered every spring at the General Electric Medical Systems facility. *Prereq: Cons. of instr.; GE employee.*

EECE 211. Algorithm Analysis and Applications

3 sem. hrs.

Introduction to the analysis of algorithms. Topics include: asymptotic complexity notation, recursion analysis, basic and advanced data structures, sorting methodologies, dynamic programming, and graph algorithms, including heuristic search techniques such as best-first and A-star algorithms. Advanced topics include NP-completeness theory and linear program-

ming. *Prereq: COEN 30 or equiv. and COEN 120 or equiv. and MATH 81 or equiv.; or COEN 30 or equiv. and COSC 154 or equiv. and MATH 81 or equiv.*

EECE 212. Pattern Recognition

3 sem. hrs.

Theory and application of pattern recognition and learning machines. Correlation methods, discriminant analysis, maximum likelihood decisions, minimax techniques, feature extraction, preprocessing, clustering, nonsupervised learning. Syntactic pattern recognition techniques. Offered occasionally. *Prereq: EECE 206.*

EECE 213. Machine Learning

3 sem. hrs.

Introduction to a range of adaptive computer algorithms; that is, these algorithms learn models that are modified as new data is presented. Additionally, explores the theoretical foundations of machine learning. Examples of machine learning algorithms to be studied include: decision trees, artificial neural networks, Bayesian learners, evolutionary algorithm, and boosting and bagging techniques. Computational learning theory and PAC learnability are also studied. *Prereq: EECE 216 or COEN 130 with cons. of instr.*

EECE 214. Information and Coding Theory

3 sem. hrs.

Introduction to information measure, mutual information, self-information, entropy, encoding of information, discrete and continuous channels, channel capacity, error detection, error correcting codes, group codes, cyclic codes, BCH codes, convolution codes, and advanced codes. Offered alternate years.

EECE 215. Neural Networks and Neural Computing

3 sem. hrs.

Introduction to artificial neural networks and neural computing. Multilayer perceptron models and back propagation. Recurrent and feedforward associative neural networks. Kohonen models and counterpropagation networks. Adaptive resonance theory and Boltzmann machines. Simulated annealing. Applications include optimization, pattern recognition in signal processing and control algorithms. Offered spring term, alternate years. *Prereq: COEN 30; or COSC 148.*

EECE 216. Artificial Intelligence

3 sem. hrs.

Introduction to artificial intelligence and expert systems. Knowledge presentation and the knowledge base. Knowledge acquisition inference engines. Forward and backward chaining. Case-based reasoning and hybrid expert systems. Applications for expert systems. Offered spring term, alternate years. *Prereq: COEN 30; or COSC 148.*

EECE 217. Computer Architecture

3 sem. hrs.

Review of basic computer architecture. Evaluation of architecture performance. Design and evaluation of instruction sets. Pipeline processors and instruction scheduling. Vector processors. Memory hierarchy and design, including cache, main and virtual memories. Memory protection schemes. Input/output and its relation to system performance. Offered fall term. *Prereq: COEN 171.*

EECE 220. Modern Control Theory

3 sem. hrs.

Review of linear algebra and matrices. State variable analysis of continuous-time and dis-

crete-time systems. Controllability and observability of linear systems. Stability of linear and nonlinear systems. Design of feedback control systems. Introduction to optimal control theory. Offered alternate years. *Prereq: EECE 205 which may be taken concurrently; or MEEN 201 which may be taken concurrently.*

EECE 221. Chaos and Nonlinear Signal Processing

3 sem. hrs.

Investigates recent research in nonlinear signal processing, temporal data mining, and chaos. Examines methods for finding hidden structures in signals and time series, which are found using techniques such as phase space reconstruction, clustering, neural networks, and genetic algorithms. Once discovered, these structures are useful for solving system classification problems and for predicting events in time series. Example application areas include motor diagnostics, heart arrhythmia classification speech recognition and financial time series prediction. Discusses topics mentioned above along with machine learning, time series analysis, adaptive signal processing, wavelets, and nonlinear dynamics. *Prereq: EECE 157.*

EECE 222. Optimal and Adaptive Digital Signal Processing

3 sem. hrs.

Optimal and adaptive digital signal processing techniques including spectral estimation, Wiener filters, linear prediction, Kalman filters, steepest descent and least mean square algorithms, and least squares and recursive least squares estimation. Offered occasionally.

Prereq: EECE 157 and EECE 206.

EECE 223. Digital Processing of Speech Signals

3 sem. hrs.

Fundamentals of speech processing; models of the speech production system; and digital representations of the speech waveform. Time domain and frequency domain speech analysis. Other topics include homomorphic speech processing, linear predictive coding of speech, and digital speech processing for man-machine voice communications. Offered alternate years. *Prereq: EECE 157; or cons. of instr.*

EECE 224. Analysis and Design of Digital Filters

3 sem. hrs.

Review of linear time-invariant discrete-time systems. Modeling and implementation of digital filters. Analog filters. Design of infinite-impulse-response and finite-impulse-response digital filters. Effects of finite-precision arithmetic. Advanced topics in digital filtering. Offered alternate years. *Prereq: EECE 221; or EECE 157.*

EECE 225. Optimal Control

3 sem. hrs.

An in-depth understanding of the problems in optimal control theory and their applications are presented. Calculus of variations, linear quadratic regulator design, dynamic programming, time-optimal, and output feedback regulating and tracking optimal control techniques are presented for continuous-time systems. Discrete-time techniques are presented for calculus of variations, linear quadratic tracking, output feedback optimal control, and time-optimal control. Optimal observers are also presented. Offered occasionally. *Prereq: EECE 205 and EECE 220.*

EECE 226. Digital Image Processing

3 sem. hrs.

Theory and practice of image digitization, processing, coding and analysis. Representations of images, image models. Techniques of image enhancement and restoration. Image compaction and coding. Segmentation and image understanding. Offered occasionally.

Prereq: EECE 157.

EECE 227. Nonlinear and Adaptive Control

3 sem. hrs.

Review of state space and modern control theory with emphasis on stability, convergence, and robustness. Lyapunov stability and advanced stability theory. Nonlinear systems analysis, feedback linearization, and sliding mode control. Real-time parameter identification and adaptive observers. Continuous-time and discrete-time self-tuning regulators and model-reference adaptive systems. Introduction to system identification and adaptive control using artificial neural networks. *Prereq: EECE 205 and EECE 220.*

EECE 229. Advanced Topics in Computers and Control 3 sem. hrs.

Course content announced prior to each offering. Students may enroll more than once because subject matter changes. Possible topics include: computer operating systems, multi-programming and multi-processing systems, computer architecture, optimal and adaptive control, stochastic control, estimation theory, and nonlinear analysis. Offered occasionally. *Prereq: Cons. of instr.*

EECE 249. Advanced Topics in Electrical Engineering 3 sem. hrs.

Course content announced prior to each offering. Students may enroll more than once because subject matter changes. Possible topics include, but are not limited to, communications, digital signal and speech processing, electric power, electromagnetic fields, materials science, and solid state devices. Offered occasionally. *Prereq: Cons. of instr.*

EECE 261. Surface-Acoustic-Wave Devices

3 sem. hrs.

Theory of surface and other acoustic modes; design, analysis, and performance of interdigital devices; multistrip couplers; SAW resonators; dispersive delay lines; system applications; current research areas. Offered occasionally. *Prereq: EECE 113 and EECE 121.*

EECE 263. Infrared and Photonics Sensors: Theory and Applications 3 sem. hrs.

Fundamentals of infrared (IR) technology. Performance capabilities and operational limitations of infrared and photonic devices and sensors. Principles and theory of infrared radiation. Analysis of transmission characteristics of optical signals through the atmosphere: effects of scattering, absorption and diffraction as a function of atmospheric parameters. Infrared sources and detectors. Passive and active infrared devices, components and sensors. Infrared-based and photonic-based sensors; applications to environmental sensing, biotechnology and medical analysis, space and surveillance systems. Infrared signature analysis. Aspects of advanced infrared and photonic technologies with possible performance

improvements. *Prereq: EECE 121, basics of solid state physics or cons. of instr.*

EECE 264. Microelectromechanical Systems and Sensors 3 sem. hrs.

Overview of microelectromechanical-MEMS-transducers and sensors. Basic engineering sciences and fundamental principles relevant to mechanical sensors and micromachined mechanical transducers. Mathematical models and design of microelectromechanical systems. Microfabrication techniques, materials and processes. Mechanical transduction techniques, pressure sensors, force and torque sensors, inertial sensors, flow sensors, micro-machined resonant sensors, micromachined chemical sensors. *Prereq: Basics of electromagnetics and physics or cons. of instr.*

EECE 270. Microwave Theory and Techniques 3 sem. hrs.

Expansion of Ohm's law to Maxwell's equations and transmission line theory. Bounded and unbounded waves. Design of impedance matching devices. Waveguide components, ferrimagnetic and paramagnetic devices, non-reciprocal circuits. Resonators and antennas. Microwave thermionic devices, solid state devices, and quantum electronics devices. Offered alternate years. *Prereq: EECE 122.*

EECE 271. Microwave Electronics 3 sem. hrs.

Basic theory of interaction between electron beams and electromagnetic fields and waves. Energy transfer in microwave tubes. Microwave oscillators and amplifiers, including masers, lasers, parametric, and other solid state devices. Noise in microwave electron devices. Offered alternate years. *Prereq: EECE 122.*

EECE 272. Microwave Measurements 3 sem. hrs.

Detection and measurement of microwave power. Measurement and error analysis on microwave power, frequency, wave length, impedance, reflection coefficient, attenuation coefficient. Microwave resonator and filter characteristics and Q-factor measurements. Directional couplers and hybrid tees. Microwave noise figure measurement. Offered alternate years. *Prereq: EECE 122.*

EECE 273. Microwave Solid-State Engineering 3 sem. hrs.

Application of quantum mechanics and solid state physics to microwave semiconductor devices. Microwave tunnel diodes, parametric and bulk effect devices. Avalanche diodes, masers, and lasers. Ferrimagnetic devices. Microwave plasmas. Molecular resonance amplifiers and oscillators. Microwave transistors and integrated circuits. Offered alternate years. *Prereq: EECE 122.*

EECE 274. Topics in Microwave Engineering 3 sem. hrs.

Course content announced prior to each offering. Students may enroll more than once because subject matter changes. Possible topics: microwave communications, microwave antennas and propagation, and industrially-applied microwave power engineering. Offered occasionally. *Prereq: EECE 122.*

EECE 281. Advanced Electric Machines and Drives 3 sem. hrs.

Machine construction and characterization. Development and application of transformation theory to synchronous and induction machines to predict machine performance under steady state and abnormal conditions. Modeling of permanent magnet and switched reluctance machines as well as other advanced machine systems. Dynamic performance prediction of electric machines and associated power electronics using equivalent network models and computer simulations. *Prereq: EECE 123 and MATH 83.*

EECE 282. Finite Element Analysis 3 sem. hrs.

Basic field formulations using Maxwell's electromagnetic field equations. General definitions and formulations of finite element discretization. Consideration of applications and method implementation. Application of the finite element method to engineering and design problems. Post processing, practical aspects and other considerations. Application of method will involve the use of commercially available software packages as well as computer code developed for this course. *Prereq: MATH 83; and proficiency in computer programming.*

EECE 285. Advanced Concepts in the Design and Modeling of Electric Machines and Drives 3 sem. hrs.

Presents advanced concepts and methodologies in designing and modeling modern electric machines controlled and operated from electronically switched electric drives, which involves methods of analysis and computation of the adverse synergistic effects which occur between the space harmonics generated in electric machinery due to magnetic circuit topologies, and time harmonics generated by electronic switching in the controllers/drives, and the impact of this synergism on losses, efficiency, torque quality and other performance issues. Full and rigorous analysis and inclusion of such space harmonics, and time harmonics are included, as well as methods of mitigation or elimination of these effects are studied in detail using advance modeling concepts and tools. Offered spring term of even years. *Prereq: EECE 123 or equiv.*

EECE 294. Practicum for Research and Development in Computing 3 sem. hrs.

Provides students, who are enrolled in the M.S. in computing program, with an opportunity to participate in the practice of research and/or development in the area of computing. Students who plan to take this course must follow the Course Guidelines, which are available from EECE and MSCS Departments. Available only to full-time students. At most, six credits of EECE 294 OR MSCS 294 may be counted toward graduation. Offered every term. S/U grade assessment. *Prereq: 3.000 MU G.P.A.; must be enrolled in Plan B option of the M.S. in computing program and have completed at least 21 credit hours of course work, with 15 credit hours earned in the graduate (200-level) courses.*

EECE 295. Independent Study 1-3 sem. hrs. Offered every term. *Prereq: Cons. of instr. and cons. of dept. ch.*

EECE 297. Department Colloquium

0 sem. hrs.

Scholarly presentations on current topics in electrical engineering and computer engineering and related areas by visiting and resident investigators. Required of all full-time graduate students each term. Offered every term. Required of all full-time EECE graduate students. S/U grade assessment.

EECE 299. Master's Thesis 1-6 sem. hrs.Offered every term. *Prereq: Cons. of instr.***EECE 396. Seminar** 0-3 sem. hrs.Offered occasionally. *Prereq: Cons. of instr.***EECE 399. Doctoral Dissertation**

1-12 sem. hrs.

Offered every term. *Prereq: Cons. of instr.***EECE 891. Continuous Enrollment — Less than Half-Time** 0 sem. hrs.

Fee. S/U grade assessment.

*Prereq: Cons. of dept. ch.***EECE 892. Continuous Enrollment — Half-Time** 0 sem. hrs.

Fee. S/U grade assessment.

*Prereq: Cons. of dept. ch.***EECE 893. Continuous Enrollment — Full-Time** 0 sem. hrs.

Fee. S/U grade assessment.

Prereq: Cons. of dept. ch.

ENGINEERING

Dean and Professor of Engineering: Jaskolski
Dean Emeritus of Engineering: Reid
Senior Associate Dean and Professor of Engineering: Widera

Associate Dean for Academic Affairs and Associate Professor of Engineering: Silver-Thorn

Associate Dean for Enrollment Management and Associate Professor of Engineering: Jensen

Assistant Dean and Director of Cooperative Education: Michaelson

Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREES OFFERED

Master of Science, Master of Science in Engineering Management; Doctor of Philosophy

ENGINEERING PROGRAMS

The College of Engineering offers four graduate engineering programs through which to pursue either a master of science or doctor of philosophy degree: biomedical engineering, civil engineering, electrical and computer engineering, and mechanical engineering. Details concerning each of these programs follow this section in alphabetical order.

Two interdisciplinary programs are offered, leading to the master of science degree. Engineering management (ENMA) is jointly offered and administered by the Colleges of Engineering and Business Administration. Details about this program can be found in the program information section of Mechanical Engineering. Health care technologies management (HCTM) is jointly offered and administered by the Colleges of Engineering and

Business Administration and the Medical College of Wisconsin. The program information section of Biomedical Engineering gives details about this program.

A final interdisciplinary doctoral program in functional imaging is jointly offered by the Department of Biomedical Engineering in the College of Engineering and the Medical College of Wisconsin. Details on this program can be found in the Biomedical Engineering section.

In addition to their graduate degree programs, the Departments of Civil and Environmental Engineering and Electrical and Computer Engineering offer non-degree graduate certificate programs in a variety of technical areas for qualified individuals with bachelor's degrees. The certificate programs are designed for practicing engineers and others who wish to update and/or expand their knowledge in specific technical areas, but do not necessarily wish to pursue master's or doctoral degrees. General information about these programs can be found in the program information sections for these departments. Detailed information is available from the individual department offices.

ENGINEERING, BIOMEDICAL See BIOMEDICAL ENGINEERING (BIEN)

ENGINEERING, CIVIL See CIVIL ENGINEERING (CIEN)

ENGINEERING, ELECTRICAL AND COMPUTER See ELECTRICAL AND COMPUTER ENGINEERING (EECE)

ENGINEERING: HEALTHCARE TECHNOLOGIES MANAGEMENT See HEALTHCARE TECHNOLOGIES MANAGEMENT (HCTM)

ENGINEERING MANAGEMENT See ENGINEERING MANAGEMENT (ENMA)

ENGINEERING, MECHANICAL See MECHANICAL ENGINEERING (MEEN)

ENGINEERING MANAGEMENT (ENMA)

Chairperson and Professor: Kim
Associate Chairperson, Director of Undergraduate Studies and Professor: Fournelle

Director of Graduate Studies and Professor: Nigro

Professor: Blumenthal (*Emeritus*), Brebrick (*Emeritus*), Brower, Cartz (*Emeritus*), Fournelle, Harris, Heinrich, Marklin, Matar (*Emeritus*), Nigro, Reid (*Emeritus*), Schimmels, Seitz, Stango, Widera

Associate Professor: Cariapa, Domblesky, Jensen, Nagurka, Rice, Silver-Thorn, Weber

Assistant Professor: Borg, Goldsborough, Koch

Adjunct Professor: Bishop, Janc, Stilp

Adjunct Associate Professor: Hoffman, Shana, Toth

Research Professor: Gaggioli

Research Associate Professor: Park

Research Assistant Professor: Huang

Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREE OFFERED

Master of Science in Engineering Management, Plan B only

PROGRAM DESCRIPTION

Engineering management is an interdisciplinary master's program designed to meet the educational needs of present and future managers in engineering fields who seek state-of-the-art education consistent with a technologically diverse and rapidly changing work environment. By its very nature, this program requires a partnership between the fields of engineering and management. Marquette's engineering management program is truly interdisciplinary since it is developed, sponsored, organized, and administered by a coalition of members from the Colleges of Business Administration and Engineering. Both colleges have graduate programs that are long-standing and highly regarded. The engineering management program capitalizes on these strengths by drawing on established and successful courses from each college. In addition, the program provides opportunities to integrate the disciplines of business and engineering. These opportunities are provided both within the curriculum and through extra-curricular activities. Graduates of the program will be equipped with advanced technical and administrative skills that are required in the current business and engineering environments.

PREREQUISITES FOR ADMISSION

Admission decisions are based on a variety of criteria, each of which is intended to measure the applicant's ability to succeed in the program. No application can be evaluated until all of the required official documents have been received.

An applicant must have completed or be in the process of completing a four-year bachelor's degree (usually in engineering) from an accredited college or university. Qualified students may apply to this program after receiving their bachelor's degree in any one of the engineering disciplines, e.g., biomedical, civil, electrical, mechanical, etc. Applicants with an undergraduate engineering minor also may be eligible for admission. Students holding a bachelor's degree in disciplines other than engineering may be admitted to the program but may be required to take additional courses.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Essay questions on the application form.

3. Official transcripts from all current and previous colleges/universities except Marquette.
4. At least two letters of recommendation.
5. Official test scores from the Graduate Records Examination (GRE) or the Graduate Management Admission Test (GMAT).
6. Resume or job profile.
7. *(For international applicants only)* a TOEFL score or other acceptable proof of English proficiency.

MASTER'S REQUIREMENTS

All students must complete a minimum of 33 credit hours of course work (11 courses), of which nine courses (27 credit hours) are considered core courses and 2 courses (6 credit hours) are electives. A minimum of six courses (18 credit hours) must be taken from the College of Engineering and three courses (9 credit hours) must be taken from the College of Business Administration.

Students who do not have an adequate undergraduate background in business may also be required to complete one or more M.B.A. foundation courses (BUAD 201–205) in preparation for the core business courses.

CORE COURSES

Nine core courses must be selected from a restricted set of classes in each of the following three areas: business administration, engineering management and decision support. The list of approved core courses may change from time to time to maintain a state-of-the-art program. Currently, the core courses that are approved in each of the three required areas are as follows:

Business Courses (select three)

BUAD 210 Managerial Economics
 BUAD 220 Operations and Supply Chain Management
 BUAD 230 Managerial Accounting
 BUAD 240 Marketing Management
 BUAD 250 Financial Management
 BUAD 262 Organizational Behavior

Engineering Courses (18 credits)

MEEN 148 Design of Engineering Experiments

and three of the following:

ENMA 281 Product and Process Development – Project(s) Management
 ENMA 282 Reliability and Design Failure Analysis
 ENMA 283 Innovation and Technology
 ENMA 284 Total Quality Engineering
 ENMA 285 Value Engineering – Measurement, Design, and Management
 ENMA 290 Management Issues in Engineering and Technology
 ENMA 295 Independent Study

Decision Support Courses (select two)

MEEN 172 Optimization of Industrial Systems
 MEEN 173 Industrial Simulation
 BUAD 224 Quantitative Decision Modeling and Analysis
 BUAD 249 Seminar in Marketing: Marketing Research
 ECON 201 Applied Econometrics

ELECTIVE COURSES

Students may choose any two (200-level) elective courses that meet their individual needs. These courses can be selected from Business Administration, Biomedical Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, and Mechanical Engineering. Students who wish to select courses from other departments must obtain approval from the Graduate Committee.

COURSE DESCRIPTIONS

GRADUATE COURSES:

ENMA 281. Product and Process Development-Project(s) Management 3 sem. hrs.

Presents tools that assist to effectively create and implement a development strategy within a complex organization. Pre-project management, aggregate project frameworks, team structures, cross-functional integration, and prototype test cycles are among the topics addressed. The capability to produce effective and efficient project flows for concurrent projects is an integral part of the course objectives.

ENMA 282. Reliability and Design Failure Analysis 3 sem. hrs.

Addresses issues involving product performance and life, an increasingly important area of design that has significant impact on sales and profits. Topics include: probabilistic models and reliability mathematics, failure mode and effects analysis, reliability measurement, reliability modeling and prediction, and finally techniques to improve reliability of products and processes. *Prereq: MATH 164 or equiv.; or MEEN 126 or equiv.*

ENMA 283. Innovation and Technology 3 sem. hrs.

Examines technology industries over the past ten to fifteen years with particular emphasis on the sweeping and fundamental changes enabled by modern computer, communication technology and the Internet. Topics of discussion include systematic entrepreneurship, the concepts of value and value migration, and disruptive innovation.

ENMA 284. Total Quality Engineering 3 sem. hrs.

Presents the quality system as a strategic management concept. As such, issues related to customer needs and value, quality chains, and performance measurement are addressed. Next, methods dealing with product/process design, quality function deployment, strategic and tactical quality tools, design review and analysis, process improvement and reengineering are discussed. Finally, techniques for quality measurement/improvement such as statistical process control, reliability, process capability, and acceptance sampling are covered.

ENMA 285. Value Engineering-Measurement, Design, and Management 3 sem. hrs.

Provides a framework for optimal design based on internal and external issues related to value-added criteria. Topics include: function analysis, the technology roadmap, and techniques involving customer-oriented product concepts in the areas of performance, maintenance/service, user-friendliness, and quality.

ENMA 290. Management Issues in Engineering and Technology 3 sem. hrs.

Presents an interdisciplinary and integrated approach to strategic management and leadership of technical and engineering organizations. Jointly taught by faculty from the Colleges of Engineering and Business Administration who serve as moderators and integrators of a series of discussion sessions involving guest speakers who are professionals working in the fields of engineering and management. *Prereq: Completion of at least five courses towards the M.S. in engineering management degree, two of which must be from the list of core business courses.*

ENMA 295. Independent Study 1-3 sem. hrs. Offered every term. *Prereq: Cons. of instr. and cons. of dept. ch.*

ENMA 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.

Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.; cons. of adviser.

ENMA 892. Continuous Enrollment — Half-Time 0 sem. hrs.

Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.; cons. of adviser.

ENMA 893. Continuous Enrollment — Full-Time 0 sem. hrs.

Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.; cons. of adviser.

ENGLISH (ENGL)

Chairperson and Professor: Machan
Professor: Bates, Block, DeFalco (*Emeritus*), M. Gillespie, Hoeveler, Hribal, McCanles (*Emeritus*), Rivero
Associate Professor: Asp (*Emerita*), Bodden, Boly, Chappell, Curran, Duffy, Hathaway, Jeffers, Krueger, Ratcliffe, Spargo
Assistant Professor: Blair, Karian, Keiser, Melamed, Nowacek, Sorby, Su, Wadsworth, Zurcher
Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREES OFFERED

Master of Arts, Plan B (non-thesis option) only; Doctor of Philosophy

SPECIALIZATIONS

Master's: British and American Literature

Doctoral: American Literature, British Literature

PROGRAM DESCRIPTIONS

The master of arts program in English provides broad coverage of the texts of English and American literature. Through courses and seminars, students develop extensive knowledge of literature and demonstrate skill in writing. Students who complete the master's program at Marquette normally find themselves well prepared for doctoral studies.

The doctorate in English is directed toward comprehensive and intensive knowledge of: literature and language with specialization in one area of British or American literature; the textual, editorial, and critical problems and backgrounds of major texts and authors; the principles of literary criticism; the basic tools, methods, and application of literary and linguistic research; and pedagogical problems. The program provides practical experience in the

teaching of literature, rhetoric, and composition to meet the needs of contemporary college education for creative scholars to teach and do research in English.

Teaching and research assistantships are available to candidates for both degrees on a competitive basis. Teaching assistants must successfully complete ENGL 290 (or its equivalent), an orientation program, and a weekly practicum. ENGL 290 will count towards the total degree requirements of both the master of arts and the doctorate.

PREREQUISITES FOR ADMISSION

Applicants are expected to have adequate preparation in English and related subjects. A well-rounded program of undergraduate English courses (26 to 30 semester hours) is required.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation.
4. GRE scores for the General Test *and* the Subject Test for Literature in English.
5. (*For international applicants only*) a TOEFL score or other acceptable proof of English proficiency.

MASTER'S REQUIREMENTS

A master's student is admitted to the Plan B (non-thesis) program which requires 30 credit hours of course work beyond the bachelor's degree. At least 24 credits must be taken in English Department courses, and at least 15 credits in graduate courses at the 200 level.

All master's students must pass a written comprehensive examination to complete the program.

PROGRAM DETAILS

A master's student is required to complete a combined undergraduate and graduate program that includes at least one upper-division or graduate course in each of the following groups. The Marquette courses listed form the models for courses taken elsewhere that will satisfy the program requirements.

Language and Linguistics

ENGL 101, 102, 103, 170, 202, 203 (*also 201, 204, 205 when content is linguistics*)

Chaucer and/or Medieval Literature

ENGL 114, 115, 204, 205

Shakespeare

ENGL 160, 217

Renaissance Literature

ENGL 117, 118, 119, 210, 215, 216

Restoration and Eighteenth-Century British Literature

ENGL 120, 121, 220, 225

Nineteenth-Century British Literature

ENGL 130, 131, 230, 235

American Literature Before 1900

ENGL 150, 151, 152, 250, 255

Twentieth-Century Literature, British or American

ENGL 145, 146, 155, 156, 240, 245, 260, 265

Introduction to Modern Critical Theory and Practice

ENGL 281

DOCTORAL REQUIREMENTS

A doctoral student will follow a program of study defined, in conjunction with an adviser, on an approved *Doctoral Program Planning Form*. A minimum of 60 credit hours of course work is required beyond the bachelor's degree (30 credit hours beyond the master's degree) plus 12 hours of dissertation credit. A doctoral student must show competence in one foreign language. The choice of language must be approved by the director of graduate studies. The student must complete all requirements listed on the *Doctoral Program Planning Form*, pass a qualifying examination, and successfully defend a dissertation to complete the program.

PROGRAM DETAILS

A doctoral student is expected to complete the requirements defined for the master's program, but must include a course in Chaucer (ENGL 114, 205), courses in *both* Twentieth-Century British Literature (ENGL 145, 146, 240, 245) and Twentieth-Century American Literature (ENGL 155, 156, 260, 265), ENGL 282, and ENGL 330. Additional course work for the doctorate will be recommended or required according to the needs of the student and will be defined on the *Doctoral Program Planning Form*. Students are individually advised at each registration.

COURSE DESCRIPTIONS

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

ENGL 101. History of the English Language
3 sem. hrs.

ENGL 102. Structure of the English Language 3 sem. hrs.

ENGL 103. English Linguistics
3 sem. hrs.

ENGL 106. The Art of Rhetoric: Theory and Application 3 sem. hrs.

ENGL 114. Chaucer
3 sem. hrs.

ENGL 115. British Literature to 1500
3 sem. hrs.

ENGL 117. Renaissance Literature: The 16th Century 3 sem. hrs.

ENGL 118. Renaissance Literature: The 17th Century 3 sem. hrs.

ENGL 119. Milton
3 sem. hrs.

ENGL 120. The Ages of Dryden and Pope: 1660-1744
3 sem. hrs.

ENGL 121. The Age of Johnson: 1744-1790
3 sem. hrs.

ENGL 130. The Romantic Period: 1790-1837
3 sem. hrs.

ENGL 131. Victorian Literature
3 sem. hrs.

ENGL 145. The Modernist Period in British Literature 3 sem. hrs.

ENGL 146. The Postmodernist Period in British Literature 3 sem. hrs.

ENGL 147. Post-Colonial Literature
3 sem. hrs.

ENGL 148. British Drama from Shaw to the Present 3 sem. hrs.

ENGL 150. Colonial and American Literature from the Beginnings to 1798 3 sem. hrs.

ENGL 151. American Literature from 1798 to 1865 3 sem. hrs.

ENGL 152. American Literature from 1865 to 1914 3 sem. hrs.

ENGL 155. Twentieth-Century American Literature: The Modern Period
3 sem. hrs.

ENGL 156. The Contemporary Period in American Literature: 1945 to Present
3 sem. hrs.

ENGL 158. American Drama
3 sem. hrs.

ENGL 159. Race, Ethnicity, and Identity in American Literature and Culture
3 sem. hrs.

ENGL 160. Shakespeare's Major Plays
3 sem. hrs.

ENGL 165. Studies of Individual Authors
3 sem. hrs.

ENGL 170. Studies in Language
3 sem. hrs.

ENGL 171. Studies in Literature and Culture
3 sem. hrs.

ENGL 173. Studies in Genre
3 sem. hrs.

ENGL 177. Studies in Race and/or Ethnic Literature 3 sem. hrs.

ENGL 185. Survey of Women's Literature
3 sem. hrs.

ENGL 186. Studies in Women and Literature
3 sem. hrs.

ENGL 191. Creative Writing Workshop
3 sem. hrs.

ENGL 198. Special Topics in Literature or Writing 3 sem. hrs.

GRADUATE COURSES:

1. In the graduate groupings, those courses entitled "Studies in . . ." are meant to give the graduate student the opportunity, under the guidance of lectures and personal conferences, for a thorough study of an area (a study of the literature and a generous share of scholarship concerning the literature). These courses are more limited in coverage than an equivalent 100-numbered course but broader than a seminar, designed specifically for the graduate student. The student will be expected to prepare substantial investigations and reports rather

than a full-scale seminar paper. The maximum enrollment in such a course will be 15 students. In some cases, exceptions may be permitted. The specific topic of the "Studies in . . ." course will be announced in the registration *Schedule of Classes*.

2. Seminars are meant to give graduate students an opportunity to work under guidance on a specific project within the subject matter area of the seminar and are meant to enable them to exchange views and discoveries with students working in the same area. A seminar paper will be required. The maximum enrollment in such a course will be 15 students. The specific topic of the seminar will be announced in the registration *Schedule of Classes*.

NOTE: Ordinarily the department offers, each term, at least one 200-level course (either a studies course or a seminar, depending on the material) in each of the following areas: Medieval (including Chaucer), Renaissance (including Shakespeare), Eighteenth-century, Nineteenth-century, Twentieth-century, American to 1900, American Since 1900, Criticism. Other courses in the group 204–285 are offered occasionally.

ENGL 201. Old English 3 sem. hrs.
The grammar and syntax of Anglo-Saxon. Selected readings from the prose and poetry in the corpus of Anglo-Saxon literature. Offered occasionally.

ENGL 202. Studies in Language and Linguistics 3 sem. hrs.
Offered occasionally.

ENGL 203. Seminar in Language and Linguistics 3 sem. hrs.
Offered occasionally.

ENGL 204. Studies in English Literature, the Beginnings to 1500 3 sem. hrs.

ENGL 205. Seminar in English Literature, the Beginnings to 1500 3 sem. hrs.

ENGL 210. Studies in Renaissance Literature 3 sem. hrs.

ENGL 215. Seminar in Renaissance Literature 3 sem. hrs.

ENGL 216. Studies in Renaissance Drama, excluding Shakespeare 3 sem. hrs.

ENGL 217. Seminar in Shakespeare 3 sem. hrs.

ENGL 220. Studies in the Literature of the Restoration and the Eighteenth Century 3 sem. hrs.

ENGL 225. Seminar in the Literature of the Restoration and the Eighteenth Century 3 sem. hrs.

ENGL 230. Studies in Nineteenth-Century British Literature 3 sem. hrs.

ENGL 235. Seminar in Nineteenth-Century British Literature 3 sem. hrs.

ENGL 240. Studies in Twentieth Century British Literature 3 sem. hrs.

ENGL 245. Seminar in Twentieth-Century British Literature 3 sem. hrs.

ENGL 250. Studies in American Literature from the Beginnings to 1900 3 sem. hrs.

ENGL 255. Seminar in American Literature from the Beginnings to 1900 3 sem. hrs.

ENGL 260. Studies in Twentieth-Century American Literature 3 sem. hrs.

ENGL 265. Seminar in Twentieth-Century American Literature 3 sem. hrs.

ENGL 270. Studies in the Drama 3 sem. hrs.

ENGL 275. Seminar in the Drama 3 sem. hrs.

ENGL 280. History of Literary Criticism 3 sem. hrs.

Study of the major critics and texts in literary criticism and critical theory from the classical period to 20th-century New Criticism. Offered occasionally.

ENGL 281. Introduction to Modern Critical Theory and Practice 3 sem. hrs.

Presents a survey of approaches commonly used in a range of modern literary studies. Acquaints students with the scope of epistemologies that currently shape interpretations in the discipline. Familiarizes students with methods of archival and bibliographic research, and introduces them to new research technologies.

ENGL 282. Study of Contemporary Literary Criticism 3 sem. hrs.

Examines in detail a range of modern literary theories and their textual applications. Consists of writings from a selection of different critical movements, which may include: Formalism, Semiotics, Structuralism, Rhetorical Studies, Narrative Theory, Psychological Criticism, Feminist Inquiry, Deconstruction, Marxism, New Historicist and Cultural Studies, and Postcolonial Discourse. In addition to studying the central tenets of each theory, students also practice its application to a variety of literary texts, preferably ones relevant to their dissertations. *Prereq: ENGL 281 or equiv.*

ENGL 285. Seminar in Literary Criticism 3 sem. hrs.

ENGL 290. Studies in Rhetorical Theory 3 sem. hrs.

Philosophy and theory of rhetoric, with emphasis on primary classical sources and the relationship of contemporary to classical theory. Provides theoretical background for the teaching of writing at the college level. Offered fall term.

ENGL 291. Seminar in the Teaching of Literature 1 sem. hr.

Theory and techniques for teaching literature: poetry, drama, and fiction (short story and novel). Various analytical approaches to context and form. General classroom procedures involving literary discussion and the assignment of themes on literary subjects. Course paper required. For college teachers and prospective college teachers. Offered occasionally. S/U grade assessment.

ENGL 295. Independent Study 1-3 sem. hrs.
Offered every term. *Prereq: Cons. of dept. ch.*

ENGL 298. Special Topics 3 sem. hrs.
Topics vary by section to offer a variety of methodological, thematic, or generic approaches to bodies of literature. See *Schedule of Classes* or dept. Web page for specific topic. Offered occasionally.

ENGL 299. Master's Thesis 3-6 sem. hrs.
Offered every term. *Prereq: Cons. of dept. ch.*

ENGL 310. Advanced Study in British Literature 3 sem. hrs.

Focuses attention on issues that inform readings across the spectrum of British literature. Provides a forum where students can share research on topics of mutual interest. *Prereq: Completion of M.A.; enrollment is limited to Ph.D. students.*

ENGL 330. Dissertation Seminar 3 sem. hrs.
Offered every term. S/U grade assessment. *Prereq: Doctoral Stndg.*

ENGL 350. Advanced Study in American Literature 3 sem. hrs.

Focuses attention on issues that inform readings across the spectrum of American literature. Provides a forum where students can share research on topics of mutual interest. *Prereq: Completion of M.A.; enrollment is limited to Ph.D. students.*

ENGL 370. Advanced Study of Genre 3 sem. hrs.

Examines theoretical issues that inform the construction and comprehension of specific literary genres. Takes interest both in traditional conceptions of that genre and in efforts to redefine those traditional conceptions. Offered occasionally. *Prereq: Completion of M.A.; enrollment is limited to Ph.D. students.*

ENGL 398. Advanced Study in Selected Topics 3 sem. hrs.

Various issues covering genres, literary periods, criticism, or language will be examined in a fashion that emphasizes reading from particular critical perspectives while recognizing options for interpretation. Offered occasionally. *Prereq: Completion of M.A.; enrollment is limited to Ph.D. students.*

ENGL 399. Doctoral Dissertation 3, 6, 9, 12 sem. hrs.

Offered every term. *Prereq: Cons. of dept. ch.*

ENGL 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.*

ENGL 892. Continuous Enrollment — Half-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.*

ENGL 893. Continuous Enrollment — Full-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.*

English as a Second Language Program (ESLP)

Marquette University currently does not offer a graduate degree program in English as a Second Language. For information on degrees or certificates in education, see the sections of this *Graduate Bulletin* relevant to the intended major academic field of study.

The Office of Campus International Programs (OCIP) provides advanced English language courses for students of other language backgrounds who need further formal instruction in spoken or written English for success in their Marquette academic studies. Departments that wish to have the English competency of their graduate students evaluated should contact OCIP for information about the English Placement Test. The results of this test are used to recommend any appropriate English language (ESLP) courses. ESLP courses are offered in the fall and spring terms. Descriptions for the courses in Composition, Reading, and Listening Comprehension are described in the *Undergraduate Bulletin*.

All international teaching assistants (TAs) are required to attend a special one-week training program before they begin their first semester as a TA. This International Teaching Assistant Program (ITAP) includes evaluations of each TA's English language and classroom skills for possible placement into the semester course ESLP 203 American Language and Communication Skills for Teaching Assistants.

COURSE DESCRIPTION

GRADUATE COURSE:

ESLP 203. American Language and Communication Skills for Teaching Assistants 2 sem. hrs.

Instruction and practice in language and communication skills. Focus on different styles of speech with special attention to comprehension of rapid, informal colloquial American English. Practice in giving short presentations and answering questions. Reading and discussion of cross-cultural topics. May not register as audit or S/U option. *Prereq:* Placement by *English as a Second Language Program* director.

EXECUTIVE MASTER OF BUSINESS ADMINISTRATION (EXBU)

See **BUSINESS ADMINISTRATION (BUAD)**

FOREIGN LANGUAGES AND LITERATURES (FOLL)

FACULTY IN SPANISH

Chairperson and Associate Professor: Castañeda

Professor: González-Pérez, Velleman

Associate Professor: Aguilú de Murphy,

G. Carrillo, Pasero, Sánchez de la Calle

Assistant Professor: Afinoguénova, Dale, Hernández, Meyler, Paulk

Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREES OFFERED

Master of Arts, students are admitted under Plan B (non-thesis option) but Plan A (thesis option) is also offered

Master of Arts in Teaching (Spanish), Plan B only

SPECIALIZATION

Spanish

PROGRAM DESCRIPTION

The Department of Foreign Languages and Literatures' graduate program in Spanish is designed to provide students with a broad background in Spanish language, literature, culture, and language teaching methodology. The majority of the department's graduates have entered teaching careers, continued on to doctoral studies, or secured a position in business or government. Students in the program form a small and relatively intimate group. Graduate seminars are kept small, averaging ten students, and students are given individual guidance throughout their course of study.

Teaching assistantships in Spanish are available to candidates on a competitive basis. Teaching assistants must take SPAN 252, Practicum for Spanish Teaching Assistants, during each fall semester of their assistantship. This course carries no credit and is not charged against the tuition hours covered by the assistantship.

PREREQUISITES FOR ADMISSION

Applicants for the master of arts (M.A.) or the master of arts in teaching (M.A.T.) programs must have a bachelor's degree, or the equivalent foreign degree, from an accredited institution.

Applicants with an undergraduate major in Spanish are expected to have completed 24 credit hours of course work beyond the intermediate level, including work in composition, conversation, and advanced work in literature. Applicants with an undergraduate minor in Spanish are expected to have completed 15 credit hours of course work beyond the intermediate level, including a survey course in literature and a course in composition and conversation. Applicants must have an undergraduate grade point average equivalent of B or above (3.00 on a 4.00 scale). Native speakers of the language, who have an undergraduate degree in the humanities, are also eligible.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation.
4. A writing sample in Spanish. This can be a term paper from one of the applicant's undergraduate Spanish courses.
5. *(For international applicants only)* a TOEFL score or other acceptable proof of English proficiency.
6. *(For teaching assistantships in Spanish)* a tape recording (no longer than 5 minutes) of their foreign speaking voice. The tape should include a reading from a prose passage and some free conversation. Foreign applicants should make a similar recording in English. The recording should be submitted directly to the director of graduate studies or the chair of the department.

MASTER OF ARTS (M.A.) REQUIREMENTS

Students may pursue either a Plan A or Plan B course of study. The student is assumed to be in Plan B unless a formal request to transfer to Plan A is approved by the department chair and the Graduate School.

Plan A students are required to complete 24 credit hours of course work, six hours of thesis work, and submit an approved thesis to complete the program. Students must also demonstrate a reading knowledge of an additional modern foreign language.

Plan B students are required to complete 30 credit hours of course work. A thesis is not required.

MASTER OF ARTS IN TEACHING (M.A.T.) REQUIREMENTS

For the master of arts in teaching degree, two Plan B (non-thesis) options are available. A thesis is not required for either option.

Plan I is designed for students who have a bachelor of arts degree with a major in Spanish and who are certified to teach. The course work requirement consists of thirty credit hours, 18–21 credit hours are in language and literature (nine credit hours must be in courses numbered 200 or above) and 9 to 12 credit hours of related education courses (six credit hours must be in courses numbered 200 or above).

Plan II is designed for students who have a bachelor of arts degree with a major in Spanish but are not certified to teach. A maximum of 46 credit hours of course work may be required, depending on the student's previous educational background.

Requirements for the master of arts in teaching program are subject to revision by the Wisconsin State Department of Public Instruction. Students in this program should consult with the director of field placements and licensure in the School of Education concerning the professional education sequence.

Required course work consists of 18–21 credit hours in Spanish language and literature (nine credit hours must be in courses numbered 200 or above) and 26 credit hours to satisfy the professional education sequence in the School of Education (EDUC 125 [3 credits for

M.A.T.], EDPL 295 [EDUC 88 with graduate-level content], EDUC 128 [3 credits for M.A.T.], EDUC 176 [5-9 credits, depending on previous fulfillment of Human Relations requirement], EDPL 234, EDPS 266, FOLA 262) and SPAN 252 (no credit). Students who have not met the Human Relations requirement in their undergraduate program will need to complete a course in this area (EDUC 48 or EDPL 244).

For full-time students, Plan II of the master of arts in teaching program normally takes four semesters to complete. For graduate teaching assistants, six semesters are required. The Pre-Professional Skills Test (PPST) and the Praxis II Content Area Test are required from all prospective candidates seeking the master of arts in teaching degree.

GENERAL MASTER'S REQUIREMENTS

Course Work for M.A. and M.A.T.

At least half of the student's work as a graduate student must be in courses numbered 200 and above. M.A. students are required to complete a total of 30 credit hours with two upper division or graduate level courses in each of the five areas listed below. M.A.T. students must complete a total of 21 credit hours in Spanish, including one course in each area listed below, with the exception of "Language and Linguistics" in which students must complete two courses. The remaining three credit hours may be taken in any of the five areas:

1. **Early Hispanic Literature**
SPAN 125, 175, 190, 193, 211, 216, or 270
2. **Modern and Contemporary Peninsular Spanish Literature**
SPAN 126, 150, 192, 219, or 220
3. **Modern and Contemporary Spanish-American Literature**
SPAN 170, 194, or 271
4. **Language and Linguistics**
SPAN 142, 185, 201, 242, or 282
5. **Hispanic Cultural Studies**
SPAN 100, 102, 103, 171, or 172

Note: A course may not be used to fulfill more than one area of study. Depending on the topic, SPAN 298 may be repeated, and can be used to fulfill the appropriate area of study. All 100-level courses taken for graduate credit will require additional work at the graduate level, such as: readings, writing assignments, and oral presentations.

Comprehensive Examinations

Candidates for the master of arts degree or the master of arts in teaching degree must pass written and oral comprehensive examinations based on the material covered in the student's course work and the master's reading list to complete the program. Examinations are normally given in November and March. Exceptions must be approved by the director of graduate studies and the department chair.

M.A. degree candidates will select, in advance, three out of the five areas listed above upon which to be tested. The exam must be written in Spanish.

M.A.T. degree candidates will be tested in both Spanish and education. For the Spanish portion, the student will select, in advance, three of the five required areas, one of which must be "Language and Linguistics." The exam must be written in Spanish. The education portion of the examination is based on two education areas of the student's choice. The answers to this portion must be written in English. The education examination usually takes place in the fall semester; the Spanish examination is given in the spring semester. The student must pass both of these areas to complete the program.

The oral portion of the comprehensive examination for the M.A. and the M.A.T. will take place approximately one week following the written exam. The student will be asked to elaborate upon, clarify and/or correct information given in the written exam (Spanish portion only for the M.A.T. candidates). No new material will be introduced during this session. The student's overall performance will not be evaluated until after this session.

The examining committee will be composed of three faculty members chosen by the director of graduate studies in consultation with the student and the department chairperson. Details on examinations, the master's reading list, and sample questions are available from the department office.

COURSE DESCRIPTIONS

Foreign Language (FOLA)

FOLA 262. Teaching World Languages and Cultures 3 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 M.A.T. in Spanish students. Offered fall term. *Prereq: Intermediate High Performance on an official Oral Proficiency Interview; admission to the Graduate School and the School of Education.*

READING COURSES:

Reading courses (numbered 203), preparatory to doctoral language examinations, are offered in the following languages: French (FREN), German (GERM), Greek (GREE), Italian (ITAL), Japanese (JAPA), Latin (LATI), and Spanish (SPAN).

Students registered for 203 Reading Courses and wishing to withdraw must do so formally in the Graduate School office.

FREN 203. Reading Course 0 sem. hrs. Introduction to grammar and the reading of basic texts designed to assist students in preparation for their doctoral language examinations. *Prereq: All students must register as audit.*

GERM 203. Reading Course 0 sem. hrs. Introduction to grammar and the reading of basic texts designed to assist students in preparation for their doctoral language examinations. *Prereq: All students must register as audit.*

GREE 203. Reading Course 0 sem. hrs. Introduction to grammar and the reading of basic texts designed to assist students in preparation for their doctoral language examinations. *Prereq: All students must register as audit.*

ITAL 203. Reading Course 0 sem. hrs. Introduction to grammar and the reading of basic texts designed to assist students in preparation for their doctoral language examinations. *Prereq: All students must register as audit.*

JAPA 203. Reading Course 0 sem. hrs. Introduction to grammar and the reading of basic texts designed to assist students in preparation for their doctoral language examinations. *Prereq: All students must register as audit.*

LATI 203. Reading Course 0 sem. hrs. An intensive introduction to Latin morphology, syntax, and vocabulary, with graded readings from a variety of classical and medieval sources. Designed to assist students in preparation for their doctoral language examinations. *Prereq: All students must register as audit.*

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

Marquette University does not currently offer a graduate degree program in French or German. However, certain upper division undergraduate courses in French and German, offered through the Department of Foreign Languages and Literatures, have been approved for graduate credit and may be taken, as appropriate, by graduate students in other graduate programs. To earn graduate credit for an upper division course, students must have the approval of their major departments and must complete extra work in the course beyond that required for undergraduate credit.

French (FREN)

FREN 115. The Middle Ages (1050-1450)
3 sem. hrs.

FREN 116. Sixteenth Century Literature
3 sem. hrs.

FREN 117. Seventeenth Century Literature
3 sem. hrs.

FREN 118. Eighteenth Century Literature
3 sem. hrs.

FREN 119. Nineteenth Century Literature
3 sem. hrs.

FREN 120. Twentieth Century Literature
3 sem. hrs.

FREN 142. French Phonetics through Oral Expression and Practice 3 sem. hrs.

FREN 185. The Logic of Grammatical Analysis 3 sem. hrs.

German (GERM)

GERM 126. German Drama
3 sem. hrs.

GERM 135. The German Novelle
3 sem. hrs.

GERM 142. Phonetics and Advanced Speaking Practice 3 sem. hrs.

GERM 185. Advanced Grammar
3 sem. hrs.

GERM 190. German Literature from the Twelfth to the Eighteenth Centuries
3 sem. hrs.

GERM 191. Eighteenth Century Literature
3 sem. hrs.

GERM 192. Nineteenth Century Literature
3 sem. hrs.

GERM 193. Modern Literary Trends 1
3 sem. hrs.

GERM 194. Modern Literary Trends 2
3 sem. hrs.

Italian (ITAL)

ITAL 100. Italian Civilization
3 sem. hrs.

ITAL 198. Topics in Language or Literature
3 sem. hrs.

Latin (LATI)

LATI 105. Survey of Republican Latin Literature 3 sem. hrs.

LATI 106. Survey of Later Latin Literature
3 sem. hrs.

LATI 110. Vergil: *Aeneid*
3 sem. hrs.

LATI 112. Horace: *Odes*
3 sem. hrs.

LATI 113. Livy
3 sem. hrs.

LATI 121. Quintilian: *Institutio Oratoria*
3 sem. hrs.

LATI 133. Roman Letter Writers
3 sem. hrs.

LATI 134. Elegiac Poetry
3 sem. hrs.

LATI 150. Roman Comedy: Plautus and Terence 3 sem. hrs.

LATI 155. Roman Satire: *Juvenal*
3 sem. hrs.

LATI 160. Tacitus: *Germania and Agricola*
3 sem. hrs.

LATI 174. Cicero: Political and Philosophical Writings 3 sem. hrs.

LATI 182. Composition
3 sem. hrs.

LATI 185. Medieval Latin
3 sem. hrs.

Spanish (SPAN)

SPAN 100. Peoples and Cultures of Spain
3 sem. hrs.

SPAN 102. Peoples and Cultures of Spanish America 3 sem. hrs.

SPAN 103. Contemporary Issues in the Hispanic World 3 sem. hrs.

SPAN 125. The Spanish Renaissance
3 sem. hrs.

SPAN 126. Contemporary Spanish Theater
3 sem. hrs.

SPAN 142. Spanish Phonetics and Applied Linguistics
3 sem. hrs.

SPAN 150. Class, Gender and Politics in Contemporary Spanish Literature
3 sem. hrs.

SPAN 170. Novels and Novelists in Spanish-America 3 sem. hrs.

SPAN 171. U.S. Latino/a Literature
3 sem. hrs.

SPAN 172. Hispanic Film and Literature
3 sem. hrs.

SPAN 175. *Don Quijote*
3 sem. hrs.

SPAN 185. Advanced Grammar and Syntax
3 sem. hrs.

SPAN 190. Medieval Spanish Literature
3 sem. hrs.

SPAN 192. Literature of the Eighteenth and Nineteenth Centuries 3 sem. hrs.

SPAN 193. Spanish-American Literature 1
3 sem. hrs.

SPAN 194. Spanish-American Literature 2
3 sem. hrs.

GRADUATE COURSES:

Spanish (SPAN)

SPAN 200. Bibliographical Materials and Research Techniques 3 sem. hrs.
Bibliographical resources and methodology of literary and linguistic research. Offered occasionally.

SPAN 201. History of the Spanish Language
3 sem. hrs.

Historical development of the Spanish language from its origins to the present in Spain and Spanish America. Offered occasionally.

SPAN 203. Reading Course 0 sem. hrs.
Introduction to grammar and the reading of basic texts designed to assist students in preparation for their doctoral language examination. *Prereq: Enrolled in Graduate School; students must register as audit.*

SPAN 205. Romance Linguistics 3 sem. hrs.
Basic principles in the evolution of Vulgar Latin into the Romance Languages, with major emphasis on French, Italian, and Spanish. Offered occasionally.

SPAN 211. Medieval Spanish Literature
3 sem. hrs.
Literary texts of Spain prior to the 16th century. Offered alternate years.

SPAN 216. Spanish Renaissance Literature
3 sem. hrs.
The major trends in Spanish literature during the 15th and 16th centuries. Offered alternate years.

SPAN 219. Seminar in Spanish Literature of the Eighteenth and Nineteenth Centuries 3 sem. hrs.
Significant trends and authors of the eighteenth and nineteenth centuries in Spain. Offered alternate years.

SPAN 220. Studies in Twentieth Century Spanish Literature
3 sem. hrs.
Contemporary Spanish literature from the Generation of 98 to the present. Offered alternate years.

SPAN 242. Applied Linguistics 3 sem. hrs.
Systematic study of language aimed at the application of descriptive, comparative, and historical linguistics to the language teaching situation. Applied linguistics in phonology, morphology, syntax, and contrastive analysis. Offered occasionally.

SPAN 252. Practicum for Spanish Teaching Assistants 0 sem. hrs.
Guided practice in teaching beginning college Spanish specifically keyed to the materials used in Spanish 1-2. Offered fall term. S/U grade assessment. *Prereq: Required of all Spanish teaching assistants.*

SPAN 270. Seminar in Spanish-American Literatures: Pre-Columbian to Modernismo 3 sem. hrs.

Study of major trends and genres in Latin America literature since the Pre-Columbian period, with particular emphasis on the *Crónicas*, baroque poetry and Romanticism. Offered occasionally.

SPAN 271. Seminar in Spanish-American Literatures: Twentieth Century
3 sem. hrs.

Study of major trends and genres in Latin American literature since *Modernismo*, with particular emphasis on the representative poets, dramatists and prose writers of the modern period. Offered occasionally.

SPAN 282. Strategies and Techniques of Written and Oral Communication
3 sem. hrs.

Spanish syntactical and stylistic problems, plus advanced oral-aural work based on topical material of a literary, artistic, or cultural nature. Offered occasionally.

SPAN 295. Independent Study 1-3 sem. hrs.
Offered every term. *Prereq: Cons. of dept. ch.*

SPAN 296. Seminar in Spanish Literature
3 sem. hrs.
To be announced. Offered occasionally.

SPAN 298. Special Topics in Language or Literature 3 sem. hrs.
Topics vary. Offered occasionally.

SPAN 299. Master's Thesis 3-6 sem. hrs.
Offered every term. *Prereq: Cons. of dept. ch.*

SPAN 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.
Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

SPAN 892. Continuous Enrollment — Half-Time 0 sem. hrs.
Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

SPAN 893. Continuous Enrollment — Full-Time 0 sem. hrs.
Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

GERONTOLOGY (GERT)

FACULTY IN GERONTOLOGY

Director: S. Barnes

Professor: A. Barnes, Bull, Iacopino

Associate Professor: Papanek, Wilson

Adjunct Assistant Professor: Hammetter

Adjunct Instructor: S. Barnes, Stein

Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREE OFFERED

Graduate Certificate in Gerontology

PROGRAM DESCRIPTION

The certificate in gerontology provides students with an introduction to the field of gerontology. It is an interdisciplinary, non-degree graduate program leading to a certificate in gerontology. The program can be taken by itself or in conjunction with pursuit of a graduate degree in another field. Course work leading to the certificate in gerontology is designed to give students: 1) An understanding of the broad, interdisciplinary nature of issues which relate to and influence older adults, 2) An understanding of the processes of aging, 3) A background in existing theories and research in gerontology, 4) An understanding of the programs, policies, and services that exist for older Americans, and 5) A foundational background as preparatory for other graduate work, or professional practice where gerontological knowledge is required.

PREREQUISITES FOR ADMISSION

Admission decisions are based on a variety of criteria, each of which is intended to measure the applicant's ability to succeed in the program. Applicants to the certificate program must have graduated with a baccalaureate degree or its equivalent from an accredited college or university. They must also have a grade point average of B (3.00 on a 4.00 scale) or above in undergraduate course work. Students from any undergraduate field may be accepted into the program.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation.
4. Test scores from a recognized graduate school entrance examination are **recommended but not required**, e.g., GRE, GMAT, LSAT, or MAT.
5. *(For international applicants only)* a TOEFL score or other acceptable proof of English proficiency.

Note: Upon acceptance to the Graduate School, applicants will be asked to complete a one-page registration form for the certificate program and submit it directly to the certificate program administrator.

CERTIFICATE REQUIREMENTS

To earn the certificate in gerontology, a student must complete 3 required courses and 1 elective course (totaling a minimum of 12 credit hours). With appropriate approvals, these courses may be applied to other graduate programs at Marquette University. Required courses are: GERT 200, 201, and 202. Elective courses include: GERT 203; DENT 296, 298; HEAL 144, 220, 222, 241, 245, 246, 248, 298; LAW 486; NURS 261, 268, 298; PHTH 512; SOCI 122, 125.

COURSE DESCRIPTIONS

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

Health (HEAL)

HEAL 144. International Health
3 sem. hrs.

Sociology (SOCI)

SOCI 122. Sociology of the Life Course
3 sem. hrs.

SOCI 125. Sociology of Aging
3 sem. hrs.

GRADUATE COURSES:

Details for the following courses can be found in this bulletin within the course descriptions for each specific discipline, with the exception of GERT, LAW, and PHTH (descriptions below).

Courses with an asterisk (*) indicate that additional tuition and permissions are required.

Dentistry (DENT)

DENT 296. Principles of Geriatric Dentistry*
3 sem. hrs.

DENT 298. Advanced Topics in Geriatric Dentistry* 3 sem. hrs.

Gerontology (GERT)

GERT 200. Gerontology 3 sem. hrs.
Introduction to the history, paradigms, theories, and research of gerontology. Critical examination of age, aging, and the aged within various contexts. Offered occasionally.

GERT 201. Policy and Administration in the Study of Aging 3 sem. hrs.
Examination of public policies and administrative structures related to the field of aging. Explores how past, present and future policy impacts older adults, especially with regard to health care, income, long term care, and end of life decisions. Offered occasionally.

GERT 202. Physiology of Aging 4 sem. hrs.
Reviews anatomy and physiology of the human organism. Age-related and pathological changes which occur in the major physiological systems over time are compared and contrasted. Combines lecture, interaction with elderly people, and clinical visits. Offered occasionally.

GERT 203. Special Topics in Gerontology
1-3 sem. hrs.
In-depth examination of a selected topic in gerontology. May be taken more than once when topics vary. Offered occasionally.

Health (HEAL)

HEAL 220. Health Care Program Development 3 sem. hrs.

HEAL 222. Health Care Quality Improvement
3 sem. hrs.

HEAL 241. Health Care Finance
3 sem. hrs.

HEAL 245. Case Management
3 sem. hrs.

HEAL 246. Health Care Informatics
3 sem. hrs.

HEAL 248. Health Care Policy
3 sem. hrs.

HEAL 298. Selected Topics in Health
3 sem. hrs.

Law (LAW)

LAW 486. Elder Law* 3 sem. hrs.
Explores the impact of an aging society on health care and social policy, including such topics as income maintenance and age discrimination, health and long-term care benefits and finance, decision-making and individual autonomy.

Nursing (NURS)

NURS 261. Theoretical Constructs: Dimensions of Aging 3 sem. hrs.

NURS 268. Issues in Long Term Care Administration* 3 sem. hrs.

NURS 298. Selected Topics in Nursing
3 sem. hrs.

Physical Therapy (PHTH)

PHTH 512. Culture and Disability 3 sem. hrs. The culture of disability, as a product of intrinsic factors of the person (spiritual beliefs and cultural practices) and those extrinsic factors in society (prejudice, stigma and discrimination) and the environment (architectural barriers) will be examined. The human dignity and civil rights of persons with disability, especially for the ever-expanding population of persons aged 65 and older, will be emphasized. Students will reflect on their own values, beliefs, and guiding life principles (Vocational Discernment) which shape their interactions and behaviors as professional health-care providers. The role of positive emotions, having choices, hope, and spiritual resolve as a foundation for the developing field of rehabilitation medicine called "Cardio-Psycho-Neuro-Immunology" will be a focus in this course. *Prereq: PHTH major; or cons. of instr.*

GRADUATE SCHOOL (GRAD)

The courses listed in this section of the bulletin do not constitute a program or degree offering, but are placed under the Graduate School heading for convenience and because they do not belong to any one graduate program.

COURSE DESCRIPTIONS

GRADUATE COURSES:

GRAD 201. Exchange/University of Wisconsin-Milwaukee 1-5 sem. hrs. In conjunction with the exchange program established between Marquette University and the University of Wisconsin-Milwaukee, students may enroll in a graduate level course at the University of Wisconsin-Milwaukee while enrolled in the master's or doctoral program at Marquette. The UWM course title and credits are identified by this GRAD exchange course. A maximum of two of these GRAD exchange courses may be included in the required minimum course work for the student's program of study at Marquette. *Prereq: Cons. of dept. ch.; written cons. of the department and the Graduate School.*

GRAD 202. Exchange/Medical College of Wisconsin 1-5 sem. hrs. In conjunction with the exchange program established between Marquette University and the Medical College of Wisconsin, students may enroll in a graduate level course at the Medical College of Wisconsin while enrolled in the master's or doctoral program at Marquette. The Medical College course title and credits are identified by this GRAD exchange course. A maximum of two of these GRAD exchange courses may be included in the required minimum course work for the student's program of study at Marquette. *Prereq: Cons. of dept. ch.; written cons. of the department and the Graduate School.*

GRAD 203. Exchange/University of Notre Dame 1-5 sem. hrs. In conjunction with the exchange program established between Marquette University and the University of Notre Dame, students may enroll in a graduate level course at the University of Notre Dame while enrolled in the master's or doctoral program at Marquette. The Notre Dame course title and credits are identified by this GRAD exchange course. A maximum of two of these GRAD exchange courses may be included in the required minimum course work for the student's program of study at Marquette. *Prereq: Cons. of dept. ch.; written cons. of the department and the Graduate School.*

GRAD 204. Exchange/Loyola University of Chicago 1-5 sem. hrs. In conjunction with the exchange program established between Marquette University and Loyola University - Chicago, students may enroll in a graduate level course at Loyola University - Chicago while enrolled in the master's or doctoral program at Marquette. The Loyola course title and credits are identified by this GRAD exchange course. A maximum of two of these GRAD exchange courses may be included in the required minimum course work for the student's program of study at Marquette. *Prereq: Cons. of dept. ch.; written cons. of the department and the Graduate School.*

GRAD 205. Exchange/Saint Louis University 1-5 sem. hrs. In conjunction with the exchange program established between Marquette University and Saint Louis University, students may enroll in a graduate level course at Saint Louis University while enrolled in the master's or doctoral program at Marquette. The Saint Louis course title and credits are identified by this GRAD exchange course. A maximum of two of these GRAD exchange courses may be included in the required minimum course work for the student's program of study at Marquette. *Prereq: Cons. of dept. ch.; written cons. of the department and the Graduate School.*

HEALTHCARE TECHNOLOGIES MANAGEMENT (HCTM)

Director and Associate Professor: Goldberg
Professor: Cotton, Hendee
Associate Professor: Hill, Kosmoski-Goepfert, Wilson
Adjunct Instructor: Weinfurt
Note: Faculty members and their ranks are for the 2005-2006 academic year.

DEGREE OFFERED

Master of Science, Plan B only

PROGRAM DESCRIPTION

The healthcare technologies management program is a collaborative effort between Marquette University and the Medical College of Wisconsin that combines management, technology and health care. The objective of the program is to educate professionals capable of managing the design, development, commercialization, and regulatory compliance of diag-

nostic and therapeutic medical devices, and the implementation, utilization, and assessment of hospital-based healthcare technologies.

Healthcare institutions, medical device companies, and healthcare consulting firms have a growing need for skilled professionals with technical and managerial skills, and an understanding of healthcare delivery and regulatory environments. Graduates of the program will have the education and skills needed to pursue career opportunities in clinical, industrial, and consulting environments. The program meets the needs of recent undergraduates seeking an advanced degree as well as employed engineers interested in opportunities for career advancement.

Elective courses, independent study projects, and internship opportunities enable students to customize their training to meet individual needs, interests, and career goals. With the assistance of a faculty and industry/clinical adviser, students are required to design and complete an applied healthcare technology management project. This independent study/internship experience will help develop skills that will be useful in the clinical or industrial environment.

The course offerings and schedules are designed to allow working students to pursue this master of science degree on a part-time basis. Full-time students can complete the program in three terms (12 months). Course topics include: technology assessment, ethics of technology utilization, standards and regulations, product development, and the environment of healthcare delivery.

PREREQUISITES FOR ADMISSION

Applications are accepted from students who have already completed a bachelor's degree in engineering, physics or a related field from an accredited institution with a minimum G.P.A. of 3.00 (on a 4.00 scale).

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Marquette University Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation.
4. A statement of purpose.
5. GRE (General Test only) average score of 60% minimum, or Medical College Admission Test (MCAT), average of 9 on the individual scores. (Waived for individuals with a doctoral degree.)
6. *(For international applicants only)* a TOEFL score or other acceptable proof of English proficiency. A minimum score of 580 on the paper-based version or 237 on the computer-based version is required. Minimum scoring for the new Internet-based version is still being established for this program.

GENERAL INFORMATION

All admitted students are required to obtain and follow the department's *Graduate Student Handbook*, which contains complete details about the program and degree requirements. This handbook is available through the Biomedical Engineering Office, (414) 288-3375.

MASTER'S DEGREE PROGRAM REQUIREMENTS

The program consists of 37.5 credit hours. All students are required to take the following courses:

- BUAD 202 Accounting Foundations (2 sem. hrs.)
 BUAD 230 Managerial Accounting (3 sem. hrs.)
 BUAD 240 Marketing Management (3 sem. hrs.)
 BUAD 250 Financial Management (3 sem. hrs.)
 BUAD 262 Organizational Behavior (3 sem. hrs.)
 HCTM 200 Survey of Biomedical Engineering Technology (3 sem. hrs.)*
 HCTM 210 Healthcare Technology Assessment (3 sem. hrs.)
 HCTM 211 Biomedical Technology Standards and Regulations (2 sem. hrs.)*
 HCTM 212 Ethics of Technology Utilization (1.5 sem. hrs.)*
 HCTM 230 Product Development of Medical Devices (2 sem. hrs.)
 HCTM 295 Applied Healthcare Technology Management Project (1 sem. hr., taken three times, for a total of 3 sem. hrs.)
 HCTM 298 Special Topics in Healthcare Technologies Management (0.5 sem. hr., taken twice, for a total of 1 sem. hr.)
 HEAL 240 The Environment of Healthcare Delivery (2 sem. hrs.) See course listing under NURSING.
 Electives Six elective credits (6 sem. hrs.) are required. Elective courses must be approved by program director.

* Course taught at the Medical College of Wisconsin.

COURSE DESCRIPTIONS

GRADUATE COURSES:

HCTM 200. Survey of Biomedical Engineering Technology 3 sem. hrs.
 Familiarizes the student with the fundamental operating principles of the technologies, their costs and purposes in medicine. Offered fall term.

HCTM 210. Healthcare Technology Assessment 3 sem. hrs.
 Introduction to healthcare technology assessment methods for hospital systems and medical businesses encompassing technical, clinical, and business elements. Topics include: clinical results analysis, gold standard comparison, Bland-Altman analysis, sensitivity/specificity analysis, and business trade-off analysis. Case studies of present and developing medical technologies are extensively used as examples of applied assessment methodologies. Offered spring term.

HCTM 211. Biomedical Technology Standards and Regulations 2 sem. hrs.
 Overview of standards and regulations that impact the development, acquisition, and management of health care technologies. Discusses international technical standards, consensus technical standards, and FDA regulations regarding the manufacture, distribution, and use of medical devices. Examines how standards and regulations affect medical tech-

nologies at all stages of maturation, from prototype development, through testing, marketing, customer use, and into obsolescence. Examines how these standards and regulations affect technology viewed from different perspectives based on what a technology is (e.g. physical device or drug, information, and knowledge) and what technology causes in the adopting organizations (e.g. change, new processes). Offered summer term.

HCTM 212. Ethics of Technology Utilization

1.5 sem. hrs.

Survey course on ethics applied to the utilization and management of technologies in a patient care setting, including topics such as: beneficence, nonmaleficence, quality-cost, resource allocation, and personal-public conflicts, technology diffusion models and controls, clinical research and research integrity, and patient rights and confidentiality. Offered summer term. HCTM 212 is a required course in the healthcare technologies management program. Taught on-line.

HCTM 230. Product Development of Medical Devices

2 sem. hrs.

Presents the activities required for the design, development, and commercialization of new medical devices. Design, testing, regulatory, and legal requirements will be presented along with project evaluation and management methods. Marketing, packaging, and sterilization issues will be discussed. Offered summer term.

HCTM 295. Independent Study

1-3 sem. hrs.
 Offered every term. *Prereq: Cons. of dept. ch.*

HCTM 298. Special Topics in Healthcare Technologies Management 0.5 sem. hrs.
 This seminar series acquaints HCTM students with current, relevant topics related to healthcare technology management. S/U grade assessment.

HCTM 398. Topics in Healthcare Technologies Management 1-3 sem. hrs.
 Registration for this course allows students in the joint Marquette University/Medical College of Wisconsin Healthcare Technologies Management Program to take courses at the Medical College of Wisconsin to fulfill the elective requirements of the program.

HCTM 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.
 Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

HCTM 892. Continuous Enrollment — Half-Time 0 sem. hrs.
 Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

HCTM 893. Continuous Enrollment — Full-Time 0 sem. hrs.
 Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

HISTORY (HIST)

Chairperson and Professor: Marten

Director of Graduate Studies and Associate

Professor: Ball

Professor: Bicha (*Emeritus*), Donnelly, Gardinier (*Emeritus*), Low (*Emeritus*), Phayer (*Emeritus*), Prucha (*Emeritus*), Ruff, Theoharis, Weber (*Emeritus*), Zupko (*Emeritus*)
Associate Professor: Avella, Burckel, C. Hay, R. Hay (*Emeritus*), Jablonsky, Krugler, Naylor, Zeps

Assistant Professor: Creary, Foster, Knox, McMahon, Meissner

Visiting Assistant Professor: Baker, Delnore, Fox, Milton, Singer

Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREES OFFERED

Master of Arts, Plan B only; Doctor of Philosophy

SPECIALIZATIONS

European History, United States History

PROGRAM DESCRIPTION

Graduate study in history permits students to increase their knowledge of the past and the processes that have shaped the human experience. Such study may prepare students for careers in scholarship, teaching, or certain public service fields.

PREREQUISITES FOR ADMISSION

For admission to the master of arts program, an applicant must have an undergraduate major in history or its equivalent. **An applicant for the doctoral program must possess a master of arts in history.**

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. A one-page statement of purpose specifying proposed areas of study and activities, along with employment, since graduation.
4. Three letters of recommendation from former teachers.
5. GRE scores (General Test only).
6. (*For doctoral applicants only*) a writing sample. Ideally, the sample should be the master's thesis, but, for graduates of non-thesis programs, it may consist of a formal seminar paper.
7. (*For international applicants only*) a TOEFL score or other acceptable proof of English proficiency.

GENERAL INFORMATION DIRECTION AND ADVISING

The director of graduate studies is charged with directing the department's graduate programs and with the general advising of all graduate students in matters of course selection, financial aid, and placement. In addition, each student chooses, in consultation with the director of graduate studies, a field adviser who will direct the student's field-specific work, including: the master's essay, the selection of post-master's course work,

completion of the *Doctoral Program Planning Form*, and the doctoral dissertation.

MASTER'S REQUIREMENTS

The two major areas in the master of arts program with their fields are:

1. *European History*
 - a. Medieval
 - b. Early Modern
 - c. Modern
2. *United States History*
 - a. Early U.S.
 - b. Modern U.S.

A master's student must complete 30 credit hours of course work, a master's essay, and a comprehensive examination. At least 18 credit hours of course work must be in history courses numbered 200 or above, and at least six of those credits must be in graduate seminars. With the consent of the department chairperson, six hours of graduate work outside the department may be included in the master of arts program. No foreign language is required for the master's degree.

COMPREHENSIVE EXAMINATION

The comprehensive written examination lasts eight hours. A committee of two examiners will assess the master of arts candidate's command of the fields of study and knowledge of historical literature. Each candidate will be examined in one major field and one minor field. Students in European history will be examined in one major field in European history and one minor field in U.S. history (although students whose emphasis is in Medieval history may choose Early Modern Europe as a minor field), while students in United States history will be examined in one U.S. field and one European field.

DOCTORAL REQUIREMENTS

The two major areas in the doctoral program with their fields are:

1. *European History*
 - a. Early Modern
 - b. Modern
2. *United States History*
 - a. Early U.S.
 - b. Modern U.S.

Possible examination fields also include medieval Europe, Asian, Latin American, or African history.

A doctoral student must complete a program of study defined on an approved *Doctoral Program Planning Form*. The program includes course work, a reading knowledge of at least one foreign language, the qualifying examination, and a dissertation.

COURSE WORK

The department's normal course work requirement for the doctoral program is 60 credit hours beyond the bachelor's degree, including course work for the master of arts but not including the 12 credit hours required for the doctoral dissertation. In the 60 credits required, a student with a master of arts must include six credit hours of research seminar courses (HIST 310, 320) and a three-hour dissertation seminar. The academic progress of all students who hold non-Marquette master's degrees will be evaluated at the end of the first year of doctoral study. The programs of students making unsatisfactory progress may be terminated at that time.

FOREIGN LANGUAGE REQUIREMENT

The student must have knowledge of at least one foreign language pertinent to their area of research. Reading skills in foreign languages are assessed by the department. Satisfactory competence in the foreign language must be demonstrated prior to the qualifying examinations, and students in continental European history must demonstrate command of the language appropriate to their research goals no later than the end of their first term of doctoral study. Failure to do so will preclude further course work until the student demonstrates the appropriate language competency. The dissertation director may require a doctoral student to show competence in a second foreign language or in statistical methods when the dissertation topic requires it.

QUALIFYING EXAMINATION

After completing all formal course work and language study, the doctoral student must take the doctoral qualifying examinations, written and oral. Written qualifying examinations are twelve hours in duration. Oral qualifying examinations, three hours in duration, are held about ten days after the written examinations.

The qualifying examinations will cover four fields: two major fields and two minor fields. Europeanists will be examined in two major fields in European history and in two minor fields in United States, Latin American, African, Asian, or European history. Students in United States history will be examined in both American fields, in a minor field in European history, and in a minor field in Latin American, African, Asian, or European history. Students may choose a minor in a topical field drawn from a list approved by the History Department faculty.

A committee of four department members assesses examination performance.

COURSE DESCRIPTIONS

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

HIST 101. The British Atlantic World to 1713
3 sem. hrs.

HIST 102. Revolutionary America, 1707-1787
3 sem. hrs.

HIST 103. The New American Nation, 1787-1836 3 sem. hrs.

HIST 104. The Civil War Era
3 sem. hrs.

HIST 106. Gilded Age to the Progressive Era, 1876-1920 3 sem. hrs.

HIST 107. United States in the Twentieth Century 1 3 sem. hrs.

HIST 108. United States in the Twentieth Century 2 3 sem. hrs.

HIST 109. The American West
3 sem. hrs.

HIST 113. American Foreign Relations 1
3 sem. hrs.

HIST 114. American Foreign Relations 2
3 sem. hrs.

HIST 115. Religion and American Life
3 sem. hrs.

HIST 119. Constitutional History of the United States 3 sem. hrs.

HIST 120. African American History
3 sem. hrs.

HIST 121. American Urban History
3 sem. hrs.

HIST 123. Childhood in America
3 sem. hrs.

HIST 124. Cultural and Intellectual History of the United States 3 sem. hrs.

HIST 125. History of Rock and Roll
3 sem. hrs.

HIST 127. The Vietnam War Era
3 sem. hrs.

HIST 131. Ancient Greece and Rome
3 sem. hrs.

HIST 134. The Crusades
3 sem. hrs.

HIST 135. The Middle Ages
3 sem. hrs.

HIST 136. Medieval England
3 sem. hrs.

HIST 137. The Renaissance
3 sem. hrs.

HIST 138. History of the Catholic Church 1, 100-1500 3 sem. hrs.

HIST 139. History of the Catholic Church 2, 1500-Present 3 sem. hrs.

HIST 140. The Age of the Reformation, 1500 to 1648 3 sem. hrs.

HIST 141. Pre-Revolutionary Europe, 1648 to 1789 3 sem. hrs.

HIST 142. The French Revolution and Napoleon, 1787 to 1815 3 sem. hrs.

HIST 143. Reaction, Revolution, and Nationalism, 1814 to 1914 3 sem. hrs.

HIST 145. Twentieth Century Europe
3 sem. hrs.

HIST 149. Intellectual History of Modern Europe 1 3 sem. hrs.

HIST 150. Intellectual History of Modern Europe 2 3 sem. hrs.

HIST 151. History and Philosophy of Crime and Punishment 3 sem. hrs.

HIST 152. Women in Western Civilization
3 sem. hrs.

HIST 154. Tudor England 1485 to 1603
3 sem. hrs.

HIST 155. Stuart and Hanoverian Britain, 1603-1815 3 sem. hrs.

HIST 156. Great Britain Since 1815
3 sem. hrs.

HIST 157. Constitutional and Legal History of England 3 sem. hrs.

HIST 158. The British Empire
3 sem. hrs.

HIST 160. Ireland Since 1780
3 sem. hrs.

HIST 162. France Since 1815
3 sem. hrs.

HIST 163. Germany, 1648-1870
3 sem. hrs.

HIST 164. Germany Since 1870
3 sem. hrs.

HIST 165. "The Great War": World War I, 1914-18 3 sem. hrs.

HIST 166. World War II
3 sem. hrs.

HIST 167. Russia to 1861
3 sem. hrs.

HIST 168. The Russian Revolution and the Soviet Union 3 sem. hrs.

HIST 170. The Cold War
3 sem. hrs.

HIST 173. The Caribbean
3 sem. hrs.

HIST 174. History of Mexico
3 sem. hrs.

HIST 179. North Africa
3 sem. hrs.

HIST 181. Modern Middle East Since 1500
3 sem. hrs.

HIST 183. Japan and the Four Dragons
3 sem. hrs.

HIST 184. Modern China
3 sem. hrs.

HIST 192. Public History
3 sem. hrs.

HIST 193. Internship in Public and Applied History 3 sem. hrs.

HIST 197. Undergraduate Colloquium in History 3 sem. hrs.

HIST 198. Special Topics in History
3 sem. hrs.

GRADUATE COURSES:

Note: Specific topics for the reading courses and the seminars will be announced each term in the *Schedule of Classes*.

HIST 210. The Art and Craft of History
3 sem. hrs.

The nature and theories of history, principles and methodologies of historical research, specializations within the discipline, and the professional applications of history. Offered fall term.

HIST 211. Colloquium in European History: Renaissance and Reformation
3 sem. hrs.

A guided reading program designed to acquaint graduate students with the major issues and historiography of Europe from the demise of the institutions and culture of the Medieval period through the end of the religious wars marked by the Peace of Westphalia of 1648. Offered in rotation with HIST 212, 213, and 214.

HIST 212. Colloquium in European History, 1648-1815 3 sem. hrs.

A guided reading program designed to acquaint graduate students with the major issues and historiography of Europe from the Peace of Westphalia to that of Vienna. Offered in rotation with HIST 211, 213, and 214.

HIST 213. Colloquium in European History, 1815-1919 3 sem. hrs.

A guided reading program designed to acquaint graduate students with the major issues and historiography of Europe from the Treaty of Vienna through the Paris peace treaties of 1919. Offered in rotation with HIST 211, 212, and 214.

HIST 214. Colloquium in European History, 1919-Present 3 sem. hrs.

A guided reading program designed to acquaint graduate students with the major issues and historiography of twentieth century Europe. Offered in rotation with HIST 211, 212, and 213.

HIST 215. Colloquium in American History: The British Atlantic World to the American Rev 3 sem. hrs.

An examination of the expansion of the English empire to North America. Topics include exploration; colony founding; the political, social and economic maturation of the colonies; the imperial system including resistance to Parliamentary laws; relations with native populations; the development of slavery; changing roles for women; and the inter-colonial wars between the English and French Empires. Offered in rotation with HIST 216, 217, and 218.

HIST 216. Colloquium in American History: The American Revolution and the New Nation 3 sem. hrs.

An examination of the creation and development of the United States to the beginnings of the sectional conflict. Topics include the causes of the rebellion; conflicts between Americans; the war for independence; constitution making; foreign relations including the War of 1812; the roles of and the relations between the executive, legislative, and judicial branches under the constitution of 1787; westward expansion and Indian removal; the problem of slavery in national politics; and the political, social, and economic maturation of the new nation. Offered in rotation with HIST 215, 217, and 218.

HIST 217. Colloquium in American History: The Sectional Conflict, Civil War Era, and Gilded Age 3 sem. hrs.

An examination of the origins and conduct of the Civil War, Reconstruction, and the political, economic, and social transformation of the United States in the late nineteenth century. Topics include the political, constitutional, economic, and moral contexts of the institution of slavery; slave life and race relations; territorial expansion, the development of the West, and Native American policy; the political, social, and economic impact of the Civil War and reconstruction; the development of an American foreign policy; the evolution of political parties; industrialization, urbanization, and immigration. Offered in rotation with HIST 215, 216, and 218.

HIST 218. Colloquium in American History: The Twentieth Century 3 sem. hrs.

An examination of the political, economic, and social history of the twentieth century. Topics include the United States' rise to global power; the Progressive Era; the Great Depression; the Cold War and its related conflicts; cultural, social, and intellectual currents; the expansion of the federal government; and the evolution of political parties. Offered in rotation with HIST 215, 216, and 217.

HIST 240. Readings in Medieval European History 3 sem. hrs.

Offered occasionally.

HIST 245. Readings in Renaissance and Reformation History 3 sem. hrs.

Offered occasionally.

HIST 250. Readings in Modern European History 3 sem. hrs.

Offered every term.

HIST 255. Readings in United States History
3 sem. hrs.

Offered every term.

HIST 265. Readings in Latin American History 3 sem. hrs.

Offered occasionally.

HIST 270. Readings in African History
3 sem. hrs.

Offered occasionally.

HIST 295. Independent Study
1-3 sem. hrs.

Offered every term. *Prereq:* Cons. of instr. and cons. of graduate prog. dir.

HIST 305. Seminar in Medieval History
3 sem. hrs.

Offered occasionally.

HIST 310. Seminar in Modern European History 3 sem. hrs.

Offered every term.

HIST 320. Seminar in United States History
3 sem. hrs.

Offered every term.

HIST 330. Dissertation Seminar 3 sem. hrs.

Offered every term. *Prereq:* Doctoral standing.

HIST 399. Doctoral Dissertation
3, 6, 9, 12 sem. hrs.

Offered every term.

HIST 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.

Fee. S/U grade assessment.

Prereq: Cons. of dept. ch.

HIST 892. Continuous Enrollment — Half-Time 0 sem. hrs.

Fee. S/U grade assessment.

Prereq: Cons. of dept. ch.

HIST 893. Continuous Enrollment — Full-Time 0 sem. hrs.

Fee. S/U grade assessment.

Prereq: Cons. of dept. ch.

HUMAN RESOURCES (HURE)
See **BUSINESS ADMINISTRATION (BUAD)**

INTERDISCIPLINARY Ph.D. (INPR)

DEGREE OFFERED

Doctor of Philosophy

PROGRAM DESCRIPTION

This doctoral program provides students and faculty with opportunities for creative academic programming and research that cross the boundaries of traditional disciplines. Instead of being supported by an individual department, school or college, each student's program is administered by an interdisciplinary faculty committee. The faculty committee shall be approved by the Graduate School. The interdisciplinary program itself shall be approved by, and under the oversight of, the University Board of Graduate Studies.

Each INPR program must combine the academic and intellectual assets, in terms of course work and faculty expertise, of two or more academic departments at Marquette. Faculty may serve on an INPR committee whether or not their departments offer doctoral degrees. The University Board of Graduate Studies serves to a great extent as a quasi department. Every program is unique in terms of course work, methodology, and research.

To gain admission into the interdisciplinary Ph.D. program, the student must:

1. Satisfy demanding academic entrance requirements.
2. Propose a faculty adviser/dissertation committee chair.
3. Propose an advisory committee.
4. Propose a dissertation research topic.
5. Present and defend a formal admission proposal to the University Board of Graduate Studies.

PREREQUISITES FOR ADMISSION

Due to the rigors of the interdisciplinary proposal and doctoral processes, only students who demonstrate a high degree of self-reliance and responsibility will be considered for admission. In addition, applicants must meet the following criteria:

1. The student must have completed a master's degree or its equivalent.*
2. The student normally must have a graduate G.P.A. of 3.50 or above, on a 4.00 scale, in the master's degree program (or equivalent graduate work).*

* A student currently enrolled in a professional program who desires to enter an interdisciplinary Ph.D. program should consult with the adviser concerning admission conditions and timing.

APPLICATION PROCESS

There are two stages in the application process: 1) Pre-Admission and 2) Formal Admission.

PRE-ADMISSION PROCESS

To achieve pre-admission status in the INPR program, an applicant must meet with the Graduate School to discuss potential qualified faculty members for the committee, and must nominate to the Graduate School a faculty member to serve as adviser/dissertation chair. Only a tenured faculty member with a significant scholarship record in the past five years

and who has served on previous dissertation or thesis committees may serve as an adviser/dissertation chair and propose interdisciplinary doctorates to the University Board of Graduate Studies. Adviser/dissertation chairs may come from either master's or doctoral granting departments. The other committee members must be active scholars. After the Graduate School verifies that the adviser/chair nominee meets the necessary criteria, and the student secures the signature of the adviser/chair nominee to confirm the commitment, the student completes the remaining steps of the process in the order given and submits all documentation to the Graduate School:

1. Submit a completed application form and fee.
2. Submit official transcripts from all current and previous colleges/universities except Marquette.
3. Submit proof of an earned master's degree.
4. Provide three letters of recommendation addressing the applicant's academic qualifications for graduate study in the intended program. (At least one of these letters shall normally be required from a faculty member involved with the applicant's master's degree.)
5. Provide the results of a standardized test (GRE, GMAT, MAT, LSAT, as appropriate).
6. (For international students only) submit a TOEFL score or other acceptable proof of English proficiency (waived if the student's undergraduate or graduate education was conducted in an English speaking college or university).

The student must include current curriculum vitae for the adviser/chair and all committee members at the time the INPR committee membership proposal is submitted to the Graduate School.

Non-Degree Course Work

Once the Graduate School has approved the INPR pre-admission and prior to formal admission, students often find that engaging in course work can afford them the opportunity to meet other faculty, complete the committee membership, and help them to refine the details of their program proposal. This can be accomplished by applying for admission as a non-degree student. In order for courses taken under this status to count toward completion of the doctoral degree, non-degree admission should occur after pre-admission to the INPR program has been granted and courses should be planned in consultation with the potential adviser. Course work taken as a non-degree student will only count toward the doctorate if the adviser and the University Board of Graduate Studies agree that it is pertinent to the program of study. No more than 12 credit hours of non-degree study may be applied toward the doctorate.

Applicants in non-degree status must submit the proposal before nine credits of course work are completed and must receive UBGs approval before completion of 12 credits.

FORMAL ADMISSION PROCESS

Prior to scheduling the proposal defense before the University Board of Graduate Studies, the student must have proposed to the dean of the Graduate School and secured approval for all dissertation committee members. The *INPR Dissertation Committee*

Approval Form must be completed by each prospective member of the committee, and his/her signature on the form attests to his/her commitment to be a fully-engaged member of the committee until the student has completed his/her INPR doctoral degree. Additionally, the formal admission process will require the following:

1. A detailed proposal must be submitted to the Graduate School.
2. A 30 minute presentation (with questions and answers) must be presented to the University Board of Graduate Studies (UBGS).
3. The student and his or her committee must address any written comments that result from the presentation to the UBGs.
4. Upon satisfactory completion of the above, the UBGs will grant formal admission into the INPR program.

The proposal must detail the entire doctoral program, including courses, satisfaction of residency requirements, qualifying examination, and detailed plans for the dissertation. The proposal document must be prepared in consultation with the applicant's adviser/dissertation chair.

The University Board of Graduate Studies will typically review proposals twice each year, once during the fall term and once during the spring term. Applicants must submit written proposals to the UBGs by October 1 for a fall-term review, and by March 1 for a spring-term review.

Students who have begun doctoral studies, whether at Marquette or another university, may apply for transfer into the interdisciplinary Ph.D. program by submitting documents required of all applicants. The student must still follow the pre-admission process detailed above. In such cases, the student may request that a maximum of 12 credits be transferred from previous course work into the interdisciplinary Ph.D. program at Marquette. The University Board of Graduate Studies will approve or disapprove of any transfer credit. Transfer credits must be for appropriate course work, as agreed upon by the advisory committee, and the applicant must have earned a grade of B or above in each course to be transferred.

DOCTORAL REQUIREMENTS

An interdisciplinary doctoral student completes a minimum of 30 credit hours of course work beyond the master's degree and meets all other requirements as stated in the section on doctoral study. Because no individual department administers an interdisciplinary doctorate, certain understandings, commitments, and restrictions beyond those required in regular degree programs are necessary. Additional details can be obtained from the vice provost for research and dean of the Graduate School, or at the Graduate School's Web site www.grad.mu.edu/programs/interdis.shtml.

COURSE DESCRIPTIONS

GRADUATE COURSES:

Each interdisciplinary degree proposal specifies the disciplines to be incorporated into the doctoral program. Students select course work from the departments that support those disciplines as well as the courses listed below.

INPR 295. Independent Study 1-3 sem. hrs.
Offered every term. *Prereq:* Cons. of dept. ch.; cons. of graduate prog. dir.

INPR 399. Doctoral Dissertation
1-12 sem. hrs.

Doctoral dissertation for doctoral candidates pursuing an approved interdisciplinary doctoral program. Offered every term. *Prereq:* Cons. of dept. ch.; cons. of prog. dir. and admitted to INPR program; Ph.D. candidates pursuing an approved interdisciplinary Ph.D. program.

INPR 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq:* Cons. of dept. ch.; cons. of prog. dir. and admitted to INPR program.

INPR 892. Continuous Enrollment — Half-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq:* Cons. of dept. ch.; cons. of prog. dir. and admitted to INPR program.

INPR 893. Continuous Enrollment — Full-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq:* Cons. of dept. ch.; cons. of prog. dir. and admitted to INPR program.

INTERNATIONAL AFFAIRS (INAF)

See **POLITICAL SCIENCE (POSC)**

LAW ENFORCEMENT LEADERSHIP AND MANAGEMENT (LELM)

Assistant Professor and Graduate Program Coordinator: Caulfield
Dean of the College of Professional Studies: Deahl

Note: Faculty members and their ranks are for the 2005-2006 academic year.

DEGREE OFFERED
Certificate

PROGRAM DESCRIPTION

The College of Professional Studies offers a non-degree graduate program leading to a certificate in law enforcement leadership and management. This program offers law enforcement officers an opportunity to strengthen their leadership and management skills in order to better serve their departments and their communities while putting themselves in a good position for promotion.

PREREQUISITES FOR ADMISSION

Applicants must have a baccalaureate degree from a college or university of recognized standing and must be an active law enforcement officer.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation.
4. (*For international applicants only*) a TOEFL score or other acceptable proof of English proficiency.

An interview will be conducted for those applicants being considered for admission. After being admitted, students must submit a course plan within 90 days.

CERTIFICATE REQUIREMENTS

The certificate program requires completion of two ADJU courses and two PUBS courses, for a total of four courses (12 credits). All four courses, ADJU 210, ADJU 211, PUBS 271, and PUBS 281, are required and make up the certificate.

Students must complete the certificate program within three years. Students are expected to earn a B or above in all courses and must maintain a 3.00 cumulative grade point average to earn the certificate in law enforcement leadership and management.

Officers completing the graduate certificate program may apply all 12 credits earned to the master of arts in public service with a specialization in administration of justice, if the degree is completed within six years of starting the certificate program. Students who complete the certificate in law enforcement leadership and management and intend to transfer those credits into a master's degree program must (1) apply for admission to the master's degree and be admitted, (2) complete a *Master's Degree Transfer of Credit Request* form, and (3) earn a B or above in each course to be transferred into the master's degree.

LEADERSHIP STUDIES (LEDR)

Assistant Professor and Graduate Program Coordinator: Caulfield

Dean of the College of Professional Studies: Deahl

Harry J. John Professor of Urban Studies: Jablonsky

Associate Professor: Krejci, Soeka

Adjunct Assistant Professor: Johnstone, Mountin

Adjunct Instructor: Barrett, Benner, Bokas, Boynton, Burns, Coan, Dugan, Egdorf, Essuman, Kendrigan, Krueger, Muenzberg, O'Neil, Ottman, Rondini, Ruscitti, Seemann
Note: Faculty members and their ranks are for the 2005-2006 academic year.

DEGREES OFFERED

Master in Leadership Studies; Certificate

SPECIALIZATIONS

Master's: Administration of Justice, Dispute Resolution, Health Care Administration, Non-profit Sector, Public Service

A general track, requiring no specialization, is also available.

Certificate: None

PROGRAM DESCRIPTIONS

MASTER'S DEGREE PROGRAM

The College of Professional Studies offers a professional degree program leading to the master in leadership studies (M.L.S.), where students may choose either a general track or one of five specializations. With a heavy emphasis on ethics and leadership, the primary program objective is to increase the leadership competency of working professionals across all disciplines. Students are expected to demonstrate their competency in leadership theory and practice by employing critical thinking and the tools of research when completing either a master's thesis or an integrative capstone project.

CERTIFICATE PROGRAM

The College of Professional Studies offers a 15 credit non-degree graduate program leading to the certificate in leadership studies. With a heavy emphasis on ethics and leadership, the program objective is to increase the leadership competency of working professionals in our community.

PREREQUISITES FOR ADMISSION

Applicants must have a baccalaureate degree from a college or university of recognized standing and minimally two years of work experience preferred.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation.
4. (*For master's applicants only*) a statement of purpose.
5. GRE (preferred), GMAT or LSAT scores, which are required only from applicants with cumulative undergraduate G.P.A.s of less than 3.20 on a 4.00 scale.
6. (*For international applicants only*) a TOEFL score or other acceptable proof of English proficiency.

Additional application requirements may be required for particular specializations. Students should contact the program coordinator for details.

An interview will be conducted for those applicants being considered for admission. After being admitted, students must submit a course plan within 90 days.

MASTER'S REQUIREMENTS

Students must choose either Plan A (thesis) or Plan B (capstone project). In both plans, either the general track or one of the five specializations (administration of justice, dispute resolution, health care administration, non-profit sector, public service) must be chosen. Students that choose to select a specialization are advised to contact the coordinator for that specialization to review requirements.

Students in Plan A must enroll for six thesis credits *after* the thesis outline has been approved by their program adviser and by the Graduate School. Similarly, students in Plan B must enroll in six capstone project credit hours

after the project outline has been approved by their program adviser and by the Graduate School.

Regardless of the plan chosen (Plan A – thesis or Plan B – capstone project), students must complete the program within six years. Students are expected to earn a B or above in all courses and must maintain a 3.00 cumulative grade point average to earn the degree of master in leadership studies.

GENERAL TRACK

Students that choose the leadership studies general track must complete a total of 36 credits in either Plan A or Plan B. Students must complete 27 credits in the following courses: LEDR 200, 210, 220, 230, 240, 250, 260, 270, and 280; six thesis credits for Plan A OR six capstone project credits for Plan B; and three credits of electives.

SPECIALIZATIONS

For Plan A, a student that chooses a specialization must complete 36 graduate-level credits: six courses (18 credits) of core course work (LEDR 210, LEDR 220, LEDR 230 or LEDR 240, LEDR 250 or LEDR 260, LEDR 270, and LEDR 280), a master's thesis (6 credits), and four additional courses (12 credits) in the area of specialization.

For Plan B, a student that chooses a specialization must complete 36 graduate-level credits: six courses (18 credits) of core course work (LEDR 210, LEDR 220, LEDR 230 or LEDR 240, LEDR 250 or LEDR 260, LEDR 270, and LEDR 280), an integrative capstone project (6 credits), and four additional courses (12 credits) in the area of specialization.

CERTIFICATE REQUIREMENTS

The certificate program requires completion of five courses (15 credits) selected from a prescribed list of LEDR courses. Of these five courses, four are required. The remaining course is an elective course that may be selected from the LEDR course listings.

The required courses are LEDR 210, LEDR 220, LEDR 230 or LEDR 240, and LEDR 250.

Students must complete the certificate program within three years. Students are expected to earn a B or above in all courses and must maintain a 3.00 cumulative grade point average to earn the certificate in leadership studies. All credits earned in the certificate program are transferable to the master in leadership studies and may be transferable to other master's degree programs, if the degree is completed within six years of starting the certificate program. Students who complete the certificate in leadership studies and intend to transfer those credits into a master's degree program must (1) apply for admission to the master's degree and be admitted, (2) complete a *Master's Degree Transfer of Credit Request* form, and (3) earn a B or above in each course to be transferred into the master's degree.

COURSE DESCRIPTIONS

GRADUATE COURSES:

LEDR 200. Introduction to Business

Processes 3 sem. hrs.

Presents an overview of fundamental business processes that will benefit leaders in multiple environments.

LEDR 210. History and Theory of

Leadership and Ethics 3 sem. hrs.

Presents analysis of historical concepts regarding leadership with a special focus on leadership ethics. Developmental processes related to ethical leadership behavior will be studied. Introduces quantitative and qualitative research methodologies appropriate for leadership issues.

LEDR 220. Self-leadership

3 sem. hrs.

Studies aspects of the self that directly impact leadership. Includes the study of intellectual, emotional, spiritual, and physical aspects. Arenas of self-leadership that are foci include: time and money usage, attitude and mood management, daily routines and stress management. Explores the ethics of self-leadership. Highly applications-focused. Includes qualitative and quantitative methodologies appropriate for measuring the self. *Prereq: LEDR 210.*

LEDR 230. Leadership and Relationships

3 sem. hrs.

Studies interpersonal aspects of leadership. Focuses on the lawfulness of one-on-one relationships. Studies conflict management, problem solving, and negotiating in the context of relationships and leadership as interpersonal coaching. Explores the ethics of interpersonal leadership behaviors. Studies methodologies, especially observational and sequential methodologies, appropriate to measuring dyadic relationship variables. *Prereq: LEDR 210. LEDR 220 recommended.*

LEDR 240. Leadership and Social Groups

3 sem. hrs.

Ethical leadership practices in contexts where diversity is the norm. Studies aspects of group membership (including age, gender, race, cohort, political affiliation, religious beliefs, sexual orientation, etc.) that affect individual and collective behavior. Uses various theories and measurement methods from the social sciences disciplines, including anthropology, social psychology, sociology, communication and economics as prominent tools. *Prereq: LEDR 210. LEDR 220 or LEDR 230 recommended.*

LEDR 250. Leadership in Organizations

3 sem. hrs.

Studies leadership as a means of reducing organizational obstacles and increasing responsiveness to organizational opportunities. Key foci: organizations as systems and organizational change processes as they intersect with leadership. Aspects of organizational leadership include: finances, risk management, workplace morality, and organizational change processes. Explores leadership ethics in organizational life. Studies quantitative and qualitative methods appropriate for measuring organizational processes. *Prereq: LEDR 220, LEDR 230 recommended.*

LEDR 260. Leaders as Worldly Citizens

3 sem. hrs.

Studies leadership and organizational leadership behavior in the context of the external culture within which the organization is embedded. Studies the intersection of world religions, world history, world monetary systems, with leadership and ethics. Issues include: nationalism, education, democracy, economic development, distribution of resources, trade vs. aid, the plight of vulnerable peoples of the world, information technology issues. Simple analyses of databases with worldwide data will be conducted. *Prereq: LEDR 210 and LEDR 250. LEDR 220 or LEDR 230 recommended.*

LEDR 270. Research Methods

3 sem. hrs.

Studies validity and reliability as well as common research designs for both quantitative and qualitative research methods. Instruction on how to measure validity and reliability provided as well as how to interpret findings. Students will make determinations as to when it may be most appropriate to use qualitative methods versus quantitative methods. Students develop research questions.

LEDR 280. Quantitative Methods

3 sem. hrs.

Intermediate statistics course. Statistical methods include: Chi-square, t-tests, ANOVA, simple and multiple regression and ANCOVA. Methods studied in the context of leadership and chosen specialization. Students learn how to apply these statistical methods with the help of SPSS. Students learn how to interpret and report findings. *Prereq: LEDR 210, LEDR 270, and one semester of undergraduate statistics.*

LEDR 290. Practicum in Leadership

3 sem. hrs.

Prereq: LEDR 210, 220, and 230 or 240.

LEDR 295. Independent Study

1-3 sem. hrs.

Prereq: Cons. of dept. ch.; cons. of program director.

LEDR 297. Capstone Integrative Project

3 sem. hrs.

Consists of a capstone project that may be completed in place of a master's thesis. *Prereq: LEDR 210, 220, 230 or 240, 250, 270, 280; all specialization courses and cons. of adviser.*

LEDR 298. Special Topics in Leadership

3 sem. hrs.

Examination of topics related to leadership that go beyond the scope of regular class offerings and that represent current issues related to ethical leadership. Representative topics include: South Africa-leadership models for American cities; leadership lessons from the Jesuits; case studies of "fallen" corporations (e.g. Enron); leadership and chaos/complexity theory; local civic leadership; and leaders in the media. *Prereq: LEDR 210, 220, and 230 or 240.*

LEDR 299. Master's Thesis

3-6 sem. hrs.

Offered every term. *Prereq: Cons. of dept. ch.*

MATHEMATICS, STATISTICS AND COMPUTER SCIENCE (MSCS)

Chairperson and Professor: Jones

Assistant Chairperson: Manyo

Professor: Bankston, Bansal, Braunschweiger (*Emeritus*), Clough, Corliss, Hamedani, Hanneken (*Emeritus*), Harris, Krenz, Lamon, Lawrence (*Emeritus*), Merrill, Moyer, Pastijn, Ziegler (*Emeritus*)

Associate Professor: Brookshear (*Emeritus*), Byleen, Ruitenburg, Simms, Slattey, Tonellato
Assistant Professor: Ahamed, Bajorunaite, Brylow, J. Factor, K. Factor, Madiraju, Sanders, Struble

Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREES OFFERED

Master of Science, students are admitted under Plan B (non-thesis option) but Plan A (thesis option) is also offered; Doctor of Philosophy

SPECIALIZATIONS

Master's: Computer Science, Mathematics, Mathematics Education

Doctoral: Algebra, Biomathematics, Logic and Foundations, Statistics

Information on the master's degree program in computing can be found in the Computing section of this bulletin. Similarly, information on the master's degree program in bioinformatics can be found in the Bioinformatics section.

PROGRAM DESCRIPTIONS

The master's program in computer science or mathematics in the Department of Mathematics, Statistics and Computer Science accommodates students whose objectives are either master's degrees or preparation for doctoral study. The master's degree program for the specialization in computer science is designed to develop the student's understanding of the mathematical and scientific principles and techniques underlying today's computer applications so that the student is well prepared to lead rather than follow the developments in the field. The program provides a unique blend of computer science and applications. This specialization will extend the student's depth of knowledge for a long-term career in the computing profession or for further graduate study and research.

The master's degree program for the specialization in mathematics offers study in pure or applied mathematics to both master's and aspiring doctoral candidates. Some master's students have enhanced their mathematics study with course work in computer science, statistics or bioinformatics to pursue such diverse careers as higher education, operations research or actuarial science. A specialization in mathematics with primary focus in statistics provides excellent background for further graduate study in statistics.

The department also offers a master of science degree in computing. Details about this program can be found in the Computing section of this bulletin.

The Special Program for Secondary School Teachers (SPSST) is designed for teachers who wish to do graduate work in the mathematical sciences but do not anticipate graduate study in mathematics beyond the master's level.

The doctoral program is designed for individuals of outstanding ability who are skilled at independent study and show promise for original research. Doctoral students will have the opportunity to develop teaching skills in an environment which emphasizes the compatibility of good teaching with good research.

Research by department faculty is carried out in: analysis, semigroup theory, group theory, graph theory, mathematical logic, universal algebra, mathematics education, general topology, analysis, theoretical and applied statistics, biostatistics, differential equations, mathematical modeling, probability, artificial intelligence, databases, bioinformatics, mobile technology, data mining, computational geometry, and computer networks.

PREREQUISITES FOR ADMISSION

Admission to the master's programs requires an undergraduate degree in computer science, mathematics, or a related field, that includes at least 12 upper division credit hours in the intended area of study. SPSST applicants should hold, or be eligible to hold, a teaching certificate for secondary school mathematics.

Admission to the doctoral program requires an undergraduate and/or master's degree in mathematics, mastery of basic mathematics, and promise for original research.

APPLICATION DEADLINE

January 15 For both the master's and the doctoral programs.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation addressing the applicant's academic qualifications for graduate study in the intended program.
4. For financial aid consideration, the GRE is recommended.
5. (*For international applicants only*) a TOEFL score or other acceptable proof of English proficiency.
6. (*For Ph.D. applicants only*) evidence of required mastery in basic mathematics.

Applicants are encouraged to submit evidence, which might include copies of papers written or projects submitted and evaluations of participation in undergraduate or graduate research programs, in addition to undergraduate and graduate records. In particular, for those students entering from a master's program, the master's thesis or essay will be considered evidence of ability to search for and synthesize source materials relating to the intended field of doctoral research.

MASTER'S REQUIREMENTS

A master's student, in computer science, mathematics, or the SPSST programs, must complete a plan of study prepared in cooperation with an adviser and approved by the Graduate Committee of the Department of Mathematics, Statistics and Computer Science. All master's students must pass a comprehensive examination to complete the program. No foreign language is required.

A master's student is admitted to the non-thesis program (Plan B) which requires at least 30 credit hours of course work and a non-credit essay that reflects the student's ability to synthesize source materials relating to a particular area of research or professional practice. All master's students are assumed to be on Plan B unless a formal request to pursue Plan A is approved by the department's Graduate Committee and the Graduate School. Plan A requires submission of a thesis, which must be an original contribution to the student's field of study. Normally, the Plan A student must complete at least 24 credit hours of course work and six credit hours of thesis work.

The computer science and mathematics master's degree programs require completion of at least two full-year graduate level courses chosen from at least two of the following areas: algebra, analysis, discrete mathematics, topology, statistics, operations research, and computer science.

The Special Program for Secondary School Teachers (SPSST) requires successful completion of MATH 101 and either MSCS 278 or 279. Courses numbered MSCS 270–279 count toward the degree credit requirements only for SPSST students.

DOCTORAL REQUIREMENTS

A doctoral student must complete a program of study defined, in conjunction with an adviser, on an approved *Doctoral Program Planning Form*. Normally, the total program, exclusive of dissertation, will include approximately 60 credit hours of course work beyond the bachelor's degree. Twelve credit hours of dissertation work is also required. Advancement to candidacy for the doctoral degree is considered after successful completion of all requirements specified on the *Doctoral Program Planning Form*, after passing an oral qualifying examination, and upon completion of the language requirement. The student's doctoral committee may require reading proficiency in mathematics in a foreign language. Typically, the doctoral committee also serves as the dissertation committee and conducts the final public oral examination, which is primarily a defense of the dissertation.

A doctoral student must complete four full-year courses, including one in analysis and one in algebra, and must pass a three-part written preliminary examination.

COURSE DESCRIPTIONS

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

For graduate students in the MSCS Department, courses marked by a * count toward degree credit requirements for SPSST students only.

Computer Science (COSC)

- COSC 125. Operating Systems**
3 sem. hrs.
- COSC 126. Data Structures and Algorithms 2** 3 sem. hrs.
- COSC 146. Numerical Analysis**
3 sem. hrs.
- COSC 152. Programming Languages**
3 sem. hrs.
- COSC 153. Principles of Database Systems**
3 sem. hrs.
- COSC 154. Data Structures for Engineers ***
3 sem. hrs.
- COSC 157. Formal Languages and Computability** 3 sem. hrs.
- COSC 158. Software Design and Analysis**
3 sem. hrs.
- COSC 159. Fundamentals of Artificial Intelligence** 3 sem. hrs.
- COSC 162. Component-Based Software Construction** 3 sem. hrs.
- COSC 170. Compiler Construction**
3 sem. hrs.
- COSC 172. Networks and Internets**
3 sem. hrs.
- COSC 174. Programming Computer Games**
3 sem. hrs.
- COSC 176. Data Mining**
3 sem. hrs.
- COSC 180. Emerging Technologies**
3 sem. hrs.
- COSC 198. Topics in Computer Science**
1-3 sem. hrs.

Mathematics (MATH)

- MATH 101. History of Mathematical Ideas**
3 sem. hrs.
- MATH 112. Topology**
3 sem. hrs.
- MATH 120. Theory of Numbers**
3 sem. hrs.
- MATH 121. Linear Algebra and Matrix Theory *** 3 sem. hrs.
- MATH 124. Abstract Algebra 1**
3 sem. hrs.
- MATH 125. Abstract Algebra 2**
3 sem. hrs.
- MATH 135. Foundations of Geometry**
3 sem. hrs.
- MATH 136. Geometric Transformations**
3 sem. hrs.
- MATH 137. The Teaching of Mathematics ***
3 sem. hrs.

- MATH 138. Topics in Elementary Mathematics from an Advanced Standpoint** 3 sem. hrs.
- MATH 140. Theory of Differential Equations**
3 sem. hrs.
- MATH 142. Elementary Partial Differential Equations** 3 sem. hrs.
- MATH 144. Operational Methods in Physics and Engineering *** 3 sem. hrs.
- MATH 146. Numerical Analysis**
3 sem. hrs.
- MATH 147. System Modeling and Analysis**
3 sem. hrs.
- MATH 150. Applied Combinatorial Mathematics** 3 sem. hrs.
- MATH 160. Theory of Probability**
3 sem. hrs.
- MATH 161. Mathematical Statistics**
3 sem. hrs.
- MATH 162. Time Series Analysis**
3 sem. hrs.
- MATH 163. Regression Analysis**
3 sem. hrs.
- MATH 164. Statistical Methods ***
3 sem. hrs.
- MATH 166. Biostatistical Methods and Models** 3 sem. hrs.
- MATH 167. Theory of Optimization**
3 sem. hrs.
- MATH 168. Computational Statistics**
3 sem. hrs.
- MATH 180. Intermediate Analysis 1**
3 sem. hrs.
- MATH 181. Intermediate Analysis 2**
3 sem. hrs.
- MATH 182. Complex Variables**
3 sem. hrs.
- MATH 198. Topics in Mathematics or Statistics** 1-3 sem. hrs.

GRADUATE COURSES:

Mathematics, Statistics and Computer Science (MSCS)

- MSCS 200. Real and Complex Analysis 1**
3 sem. hrs.
Involves study of algebraic structures of real analysis, function spaces, introduction to linear operators, measure and integration theory, convergence theorems, limits, continuity, derivatives. Offered alternate years.
Prereq: MATH 180.
- MSCS 201. Real and Complex Analysis 2**
3 sem. hrs.
Involves study of algebraic structures of complex analysis, function spaces, convergence theorems, complex number system, limits, continuity, derivatives, Cauchy integral theory,

residues, analytic functions, Riemann surfaces, conformal mapping. Offered alternate years.
Prereq: MATH 182.

MSCS 209. Computer Networks 1 3 sem. hrs.
An intensive study of computer networking and networking standards with hands-on experience. Following the ISO-OSI model, the first term concentrates on the lower four layers (physical, datalink, networking, and transport) and the second on the upper four (transport, session, presentation, and application). Offered regularly. *Prereq: COSC 125.*

MSCS 210. Computer Networks 2 3 sem. hrs.
An intensive study of computer networking and networking standards with hands-on experience. Following the ISO-OSI model, the first term concentrates on the lower four layers (physical, datalink, networking, and transport) and the second on the upper four (transport, session, presentation, and application). Offered regularly. *Prereq: COSC 125.*

MSCS 212. Algebra 1 3 sem. hrs.
Topics in groups, rings, fields and vector spaces including Sylow's theorems, field of quotients of an integral domain, structure of finitely generated modules over a principal ideal domain, Galois theory of equations, ordered fields, classical groups. Offered alternate years.
Prereq: MATH 124 or equiv.

MSCS 213. Algebra 2 3 sem. hrs.
Continuation of the MSCS 212-213 course sequence. Offered alternate years.
Prereq: MSCS 212.

MSCS 215. Advanced Linear Algebra
3 sem. hrs.
Linear systems of equations, linear transformations, polynomial algebras, polynomial ideals, direct sum decomposition, canonical forms, inner product spaces, linear functionals, adjoint operators, spectral theory. Offered spring term.
Prereq: MATH 121 or equiv.

MSCS 216. Logic and Set Theory 1
3 sem. hrs.
Naïve set theory, first-order logic, elementary model theory, non-standard analysis, Gödel's incompleteness theorems for elementary arithmetic, axioms for set theory, ordinal and cardinal arithmetic, the continuum hypothesis, methods of inner models and forcing for proving consistency and independence results. Offered occasionally. *Prereq: MATH 124 or equiv.*

MSCS 217. Logic and Set Theory 2
3 sem. hrs.
Continuation of the MSCS 216-217 course sequence. Offered occasionally. *Prereq: MSCS 216 or cons. of instr.*

MSCS 218. Universal Algebra and Semigroups 1 3 sem. hrs.
Algebras, subalgebras, homomorphisms and direct products. Fundamentals of lattice theory. Isomorphism theorems, the subdirect representation theorem, class operators and varieties, free algebras. Basic notions of semigroup theory including congruence relations, Green's relations, 0-simple semigroups; regular semigroups, in particular inverse semigroups and completely regular semigroups. Offered alternate years. *Prereq: MATH 124 or equiv.*

MSCS 219. Universal Algebra and Semigroups 2 3 sem. hrs.

Continuation of the MSCS 218-219 course sequence. Offered alternate years. *Prereq: MSCS 218 and cons. of instr.*

MSCS 220. Topology 1 3 sem. hrs.

Metric spaces, fundamental topology notions, subspace topology, product spaces, quotient spaces, separation axioms, Tietze's theorem, compactness, metrization, uniform spaces, function spaces, homotopy relation, fundamental group, computing manifold groups. Offered occasionally. *Prereq: MATH 180 or equiv.*

MSCS 221. Topology 2 3 sem. hrs.

Continuation of the MSCS 220-221 course sequence. Offered occasionally. *Prereq: MSCS 220.*

MSCS 222. Applied Discrete Mathematics 1 3 sem. hrs.

Applied discrete mathematics for the mathematics, engineering and computer science graduate student. Emphasis on graph theory and counting problems that serve as a foundation for research areas in the second semester. Theory and applications are covered for topics including trees, graph coloring, chromatic polynomials, generating functions, recurrence relations, distinct colorings and Polyá's Theorem. Offered alternate years. *Prereq: COSC 61 and MATH 80 or equiv.; MATH 81 and MATH 90 or equiv.*

MSCS 223. Applied Discrete Mathematics 2 3 sem. hrs.

Applied discrete mathematics for the mathematics, engineering, and computer science graduate student. Existence and optimization problems in combinatorics. Initial work centers on experimental design, coding theory and some existence problems in graph theory. Emphasis on using tools from MSCS 222 to do primary research centering on existence and optimization in a combinatorial area. Offered alternate years. *Prereq: MSCS 222.*

MSCS 224. Design and Analysis of Algorithms 3 sem. hrs.

Approaches for creating solutions to problems and determining the space and time efficiency of those solutions. Design techniques are covered, such as divide and conquer, heuristic, randomized, and induction. Analysis of time and space complexity may include applications of the Master Theorem, amortized analysis, probabilistic arguments, etc. Complexity theory such as NP and PSPACE completeness is also considered. Offered yearly. *Prereq: MSCS 222 or equiv.*

MSCS 226. Paradigms for Software Development 1 3 sem. hrs.

The imperative and object-oriented programming approaches to software design and development are experienced using software engineering principles appropriate for each paradigm. These two paradigms are four of the main paradigms used in software development. Offered occasionally. *Prereq: COSC 61 and COSC 66 or equiv.'s and two terms of upper division computer science courses.*

MSCS 227. Paradigms for Software Development 2 3 sem. hrs.

The functional and declarative programming approaches to software design and development are experienced using software engineering principles appropriate for each paradigm. These two paradigms are four of the main paradigms used in software development. Offered occasionally. *Prereq: COSC 61 and COSC 66 or equiv.'s and two terms of upper division computer science courses.*

MSCS 228. Data Mining 3 sem. hrs.

Techniques for extracting "interesting" relationships and knowledge hidden in data, such as decision trees, association rules, clustering, neural networks, Bayesian classifiers, feature selection, pattern assessment, inductive logic programming, outlier analysis, data imputation, and data integration. Offered occasionally. *Prereq: COSC 55 and COSC 153; or COSC 55 and COSC 159; or COSC 55 and MATH 164; or equiv.*

MSCS 236. Component Architecture

3 sem. hrs.

Focuses on designing and implementing software components, and ways of specifying their interconnection and interaction. The primary technology is Java Beans, although other approaches such as ActiveX are also considered. General notions relating to specifying and identifying components and the general distribution of resources are examined.

MSCS 237. Distributed Computing

3 sem. hrs.

Focuses primarily on the interconnection of software components, both in the way they communicate with one another, and in the way they are themselves distributed. The concentration is not as much on the technical detail of standards such as Corba, Java RMI, and Distributed Network Architecture, but on the ways these technologies can be used to construct dynamic infrastructures for welding diverse local environments into one community of cooperating parts. The emphasis is very much upon allowing heterogeneity, and on solving business problems related to distributed concentrations of data.

MSCS 238. Enterprise Architecture

3 sem. hrs.

Focuses totally on the server side of communications, and on the ways of using software components as wrappers of all kinds of objects, so they can participate in highly distributed environments involving security and transactions. Attention is paid to establishing universal environments for naming resources and finding them, and to ways of managing the life cycle of both data and program components. The main technology considered is Enterprise Java Beans.

MSCS 239. Information Representation

3 sem. hrs.

Focuses on using special grammars and their associated language for communicating business information universally amongst very diverse systems. The attention is not on the formalities of the grammars, but on the ways one can take advantage of knowing that documents are valid with respect to those grammars. The particular technology primarily considered is

XML, and many current standards from the XML community are considered and used. Offered regularly.

MSCS 240. Theory of Differential Equations 1 3 sem. hrs.

Basic theory concerning existence, uniqueness, continuation, asymptotic behavior, and stability of solutions of linear and non-linear systems of ordinary differential equations. Offered alternate years. *Prereq: MATH 180 or equiv.*

MSCS 241. Theory of Differential Equations 2 3 sem. hrs.

Theory of discrete and continuous dynamical systems. Periodic solutions, bifurcations, chaotic systems, attractors, fractal dimension, and simulation of these systems. Offered alternate years. *Prereq: MATH 180 or equiv.*

MSCS 250. Functional Analysis 1 3 sem. hrs.

Fundamental concepts in the theory of Hilbert, Banach, normed linear, and general topological linear spaces. Offered occasionally. *Prereq: MSCS 121 or equiv. and MSCS 180 or equiv.*

MSCS 251. Functional Analysis 2 3 sem. hrs.

Continuation of the MSCS 250-251 course sequence. Offered occasionally. *Prereq: MSCS 250.*

MSCS 252. Deterministic Models in Operations Research 3 sem. hrs.

Principles of deterministic model building in operations research. Linear programming and duality. Dynamic and integer programming. Nonlinear optimization and parameter estimation. Offered occasionally. *Prereq: MATH 121 or equiv.*

MSCS 253. Stochastic Models in Operations Research 3 sem. hrs.

Principles of stochastic model building in operations research. Queuing theory, renewal processes, continuous Markov chains and simulation techniques. Offered alternate years. *Prereq: MATH 160 or equiv.*

MSCS 260. Probability and Statistics 1 3 sem. hrs.

Counting techniques, sample spaces, random variables (discrete, continuous and mixed), probability functions for discrete random variables, cumulative distribution functions, probability density functions for continuous random variables, special discrete and continuous distributions, random vectors and their distributions, sampling distributions, characteristic functions, Central Limit Theorem, Law of Large Numbers. Offered alternate years. *Prereq: MATH 180 or equiv. or cons. of instr.*

MSCS 261. Probability and Statistics 2 3 sem. hrs.

Brief review of sampling distributions, Central Limit Theorem and Law of Large Numbers. Estimation, testing hypotheses, regression and correlation analysis, non-parametric methods. Offered alternate years. *Prereq: MSCS 260.*

MSCS 262. Analysis of Variance and Covariance 3 sem. hrs.

Review of statistical inference. One-way layout and multiple comparison. Two-, three-, and higher-way layouts. Latin squares, incomplete block and nested design. Analysis of covariance. Offered occasionally. *Prereq: MATH 161 or equiv.*

MSCS 268. Multivariate Statistical Analysis
3 sem. hrs.

Basic properties of random vectors, multivariate normal distribution, estimations of mean vector and covariance matrix, Wishart distribution, hypothesis testing, Hotelling's T², multivariate analysis of variance, principal component analysis, factor analysis, canonical correlation analysis, classification and discriminant analysis. Offered occasionally. *Prereq: MATH 121 and MATH 161.*

MSCS 270. Advanced Geometry 1 3 sem. hrs.

Mathematical logic; historical development of geometry; critique of Euclidean geometry; development of several postulational systems such as incidence, affine and finite geometries; emphasis on geometric proof. Offered fall term. *Prereq: Only SPSST students may receive graduate credit.*

MSCS 271. Advanced Geometry 2 3 sem. hrs.

Riemannian and hyperbolic geometries; geometric transformations; projective geometry. Offered occasionally. *Prereq: MSCS 270; only SPSST students may receive graduate credit.*

MSCS 272. Algebraic Structures 1
3 sem. hrs.

Sets, relations, mappings (functions), operations; postulational approach to algebraic systems including groups, rings and the number system. Offered fall term. *Prereq: Only SPSST students may receive graduate credit.*

MSCS 273. Algebraic Structures 2
3 sem. hrs.

Polynomial rings, vector spaces, bases, and coordinate systems; linear transformation and matrices; characteristic values; applications to geometry and analysis. Offered occasionally. *Prereq: MSCS 272; only SPSST students may receive graduate credit.*

MSCS 274. Mathematical Analysis 1
3 sem. hrs.

The real and complex fields. Euclidean spaces; functions; limits, continuity, differentiation. Offered annually. *Prereq: Only SPSST students may receive graduate credit.*

MSCS 275. Mathematical Analysis 2
3 sem. hrs.

Integration; series; elements of complex analysis. Offered occasionally. *Prereq: MSCS 274; only SPSST students may receive graduate credit.*

MSCS 276. Probability and Statistics
3 sem. hrs.

Probability, discrete and continuous distributions. Treatment of data, point and interval estimate, hypothesis testing. Large and small sample methods, regression, non-parametric methods. Analysis of variance, multiple comparison methods. Offered occasionally. *Prereq: Only SPSST students may receive graduate credit.*

MSCS 277. Innovations in Secondary Mathematics: Meeting the NCTM Standards 3 sem. hrs.

Online course designed for teachers of secondary mathematics. Relevant NCTM standards are emphasized through discussion, projects, and implementation in a secondary mathemat-

ics classroom. Mathematics content amplifies and extends selected topics of secondary mathematics. Title and content vary. Credit may be earned multiple times-once for each title. Offered occasionally. *Prereq: Cons. of dept. ch.; one semester of calculus and access to an algebra or geometry class of secondary students; or cons. of course coordinator. SPSST and School of Education students may receive graduate credit.*

MSCS 278. Seminar in Mathematics Curriculum Development and Material 1
3 sem. hrs.

Psychology of learning as it correlates with the ability to grasp mathematics concepts; tests and measurements in relationship to programming and scheduling of students; selection of curriculum and materials for various ability levels; classroom learning activities in mathematics curriculum and an in-depth study of experimental programs. Offered occasionally. *Prereq: Teaching experience in secondary mathematics. Only SPSST students may receive graduate credit.*

MSCS 279. Seminar in Mathematics Curriculum Development and Material 2
3 sem. hrs.

Philosophy of education with particular attention to mathematics education; development by students of useful curricula in the form of teaching units, evaluation materials, and student and teacher bibliographies for specific topics, grade levels, and ability groups; aspects of supervision as related to the role of department chairperson. Offered occasionally. *Prereq: MSCS 278; only SPSST students may receive graduate credit.*

MSCS 280. Topics in Analysis 3 sem. hrs.
Offered occasionally.**MSCS 281. Topics in Applied Mathematics**
1-3 sem. hrs.

Offered occasionally. *Prereq: Cons. of instr.*

MSCS 282. Topics in Computer Science
3 sem. hrs.

Offered occasionally.

MSCS 284. Topics in Algebra 3 sem. hrs.
Offered occasionally.**MSCS 285. Topics in Foundations**
1-3 sem. hrs.

Offered occasionally. *Prereq: Cons. of instr.*

MSCS 286. Topics in Geometry and Topology 3 sem. hrs.

Offered occasionally.

MSCS 288. Topics in Probability and Statistics 3 sem. hrs.

Offered fall term.

MSCS 289. Topics in Mathematics Education
3 sem. hrs.

Offered occasionally.

MSCS 294. Practicum for Research and Development in Computing 3 sem. hrs.

Offered every term. S/U grade assessment. *Prereq: 3,000 MU G.P.A.; must be enrolled in Plan B option of the M.S. in computing program and have completed at least 21 credit hours of course work with 15 credit hours earned in*

graduate (200-level) courses. Available only to full-time students.

MSCS 295. Independent Study 1-3 sem. hrs.
Offered every term. *Prereq: Cons. of dept. ch.***MSCS 296. Seminar**
1-3 sem. hrs.**MSCS 299. Master's Thesis** 3-6 sem. hrs.
Offered every term. *Prereq: Cons. of dept. ch.***MSCS 399. Doctoral Dissertation**
1-12 sem. hrs.

Offered every term. *Prereq: Cons. of dept. ch.*

MSCS 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.

Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

MSCS 892. Continuous Enrollment — Half-Time 0 sem. hrs.

Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

MSCS 893. Continuous Enrollment — Full-Time 0 sem. hrs.

Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

MECHANICAL ENGINEERING (MEEN)

Chairperson and Professor: Kim
Associate Chairperson, Director of Undergraduate Studies and Professor: Fournelle
Director of Graduate Studies and Professor: Nigro
Professor: Blumenthal (*Emeritus*), Brebrick (*Emeritus*), Brower, Cartz (*Emeritus*), Fournelle, Harris, Heinrich, Marklin, Matar (*Emeritus*), Nigro, Reid (*Emeritus*), Schimmels, Seitz, Stango, Widera
Associate Professor: Cariapa, Domblesky, Jensen, Nagurka, Rice, Silver-Thorn, Weber
Assistant Professor: Borg, Goldsborough, Koch
Adjunct Professor: Bishop, Janc, Stilp
Adjunct Associate Professor: Hoffman, Shana, Toth
Research Professor: Gaggioli
Research Associate Professor: Park
Research Assistant Professor: Huang
Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREES OFFERED

Master of Science, students are admitted under Plan A (thesis option) but Plan B (non-thesis option) is also offered; Doctor of Philosophy

MISSION STATEMENT

In embracing the missions of the university and the College of Engineering, it is the mission of the Department of Mechanical Engineering to offer high quality, up-to-date, nationally-recognized engineering programs that prepare students for successful careers. This success is marked by the graduates' commitment to lifelong learning, a deep concern for the impact of their work on others, research that advances technical and scientific knowledge, and service to professional and civic

communities. The department also strives to develop students and faculty who will be recognized as exceptional in their pursuit of excellence, sense of community, spirit of collaboration, and ability to define problems and accomplish goals.

SPECIALIZATIONS

Energy Systems, Manufacturing Systems, Mechanical Systems

PROGRAM DESCRIPTION

The Department of Mechanical Engineering offers a master's and a doctoral program in mechanical engineering.

Course work and research in the mechanical engineering program may involve the broad fundamentals of mechanical engineering or may concentrate on one or more of the following fields: energy systems, manufacturing systems, and mechanical systems. In these fields, engineering principles are applied not only to traditional equipment and methods but also to modern and emerging technologies. Typically, the engineering course work and research are augmented by laboratory studies. Although the study of advanced engineering mathematics and, often, basic science is necessary in all programs of study, the selection of subjects may vary depending upon the field of specialization and the student's professional objectives.

ENERGY SYSTEMS

A concentration in energy systems typically entails advanced study of *a*) thermodynamics, fluid mechanics, heat and mass transfer, and combustion; *b*) the application of these principles to phenomena and devices which constitute energy-conversion systems; and *c*) the analysis, simulation, and design of such systems as well as plants; e.g., chemical, metallurgical, food, etc., which are energy-intensive. Current research topics include: plant optimization, fuel cells, cogeneration systems, fluid mechanics and heat transfer in surface mount technology, engine emissions/process effluents, and jet engine propulsion systems.

MANUFACTURING SYSTEMS

A concentration in manufacturing systems engineering allows students to focus on a broad range of topics. These topics range from micro issues, such as material-related issues and cutting mechanisms in material removal processes, to macro analysis of complex manufacturing systems from either a process or ergonomics perspective. The focus of this concentration may be computer integrated manufacturing, material processing, mechanical behavior of materials, manufacturing processes, quality systems, or ergonomics within manufacturing. Normally, each of these multi-disciplinary areas requires certain core courses along with specialized studies, which may include advanced courses in other engineering disciplines, courses in mathematics and statistics, and/or courses in business administration. Current research topics include: cellular manufacturing, polishing and mass finishing processes, rapid prototyping, robotic systems, production integration (JIT, TQC, CIM), ergonomics of assembly operations, reliability/quality estimation, human performance and safety evaluation, and materials forming and joining processes.

MECHANICAL SYSTEMS

A concentration in mechanical systems typically entails advanced study of *a*) mechanical system design and analysis and *b*) modeling, simulation, and control. Mechanical design and analysis focuses on the use of physical and mathematical principles to understand the behavior of mechanical systems. It includes computer-aided optimal design, such as the design of multi-body, multi-degree-of-freedom mechanical systems. Modeling, simulation, and control involve the study of theoretical mechanics in conjunction with computational applications including advanced dynamics, kinematics, and stress analysis. Other applications include the modeling and control of manufacturing processes, including robotics and automated deformation processing. Current research areas include: surface mount technology, composite and polymeric materials, control in automated assembly, surface finishing processes, design of compliant machine tools, metal cutting/forming mechanics, finite element methods, and pressure vessels comprised of multi-layered composites.

PREREQUISITES FOR ADMISSION

Adequate preparation in engineering, mathematics, and science is required. If a student does not have an adequate undergraduate background, some remedial studies may be necessary, depending upon the graduate field of specialization the student selects.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation.
4. *(For doctoral applicants only)* a brief statement of purpose and copies of any published work, including master's theses and essays.
5. *(For international applicants only)* a TOEFL score or other acceptable proof of English proficiency.
6. *(For doctoral and all international applicants)* GRE scores (General Test only).
7. The GRE also is recommended for, and may be requested of, master's applicants with undergraduate grade point averages less than 3.00 out of 4.00.

BACHELOR'S-MASTER'S PROGRAM

This program enables students to earn both their master of science degree in mechanical engineering and a bachelor of science degree from the College of Engineering in the span of five years. Only the thesis option is available with this program. Qualified students (3.50/4.00 G.P.A.) who are enrolled in the Mechanical Engineering Department at Marquette University may apply for admission to this program during their undergraduate junior year. Students must submit an application to the Graduate School, indicate their interest in the five year program, and meet all other admission criteria as stated in the Application Requirements section. (GRE test scores are not required.)

Students select graduate level courses in their senior undergraduate year as their electives; these elective courses double-count toward the undergraduate and graduate degrees. However, only a maximum of 6 credit hours will apply toward the graduate degree. Upon completion of the first term as a master's candidate, the student must petition the Graduate School to transfer courses taken as an undergraduate to the master's degree.

Students begin their research for the thesis the summer between their junior and senior years. Their research is continued the summer between their senior and fifth years and throughout their fifth year, culminating in the preparation of a written thesis and defense.

MASTER'S REQUIREMENTS

A master's student may pursue a thesis program (Plan A) or a non-thesis program (Plan B). However, students who intend to continue for the doctoral degree and those students who are receiving financial aid in the form of assistantships must select the thesis option. In Plan A, the student must complete 24 credit hours of course work, 6 credit hours of thesis work, and submit an approved thesis. In Plan B, the student must complete 33 credit hours of course work. A student in either the Plan A or the Plan B option must take a minimum of 3 credit hours of an approved math course. A minimum of one-half of the total course work requirement in both plans must be 200-level. All students are required to take at least one-half of their total course work from the Department of Mechanical Engineering course offerings. A maximum of 6 credit hours of graduate level credit from other accredited institutions may be accepted toward the requirements of the degree. Independent Study course work can account for a maximum of 3 credit hours. The student must also attend and participate in the departmental seminar.

DOCTORAL REQUIREMENTS

A doctoral student must complete the program of study prepared in collaboration with his or her permanent adviser and outlined on an approved *Doctoral Program Planning Form*. The program typically requires 60 credit hours of course work beyond the baccalaureate degree (30 credit hours beyond the master's degree), plus 12 credit hours of dissertation work. At least one-half of the total course work requirement must involve 200-level courses. Students are required to take at least one-half of their total course work from the Department of Mechanical Engineering course offerings. A maximum of 6 credit hours of graduate level credit from other accredited institutions may be accepted toward the requirements of the degree. Independent Study course work can account for a maximum of 3 credit hours. The student must also attend and participate in the departmental seminar. Finally, he or she must pass a doctoral qualifying examination and submit and successfully defend a dissertation. The dissertation must represent an original research contribution and demonstrate both high scholarly achievement and the ability to conduct independent research.

COURSE DESCRIPTIONS**UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:**

- MEEN 116. Energy Conversion Systems** 3 sem. hrs.
- MEEN 117. Heating and Air-conditioning Systems** 3 sem. hrs.
- MEEN 118. Power Plants** 3 sem. hrs.
- MEEN 119. Topics in Energy Conversion** 1-3 sem. hrs.
- MEEN 133. Internal Combustion Engines** 3 sem. hrs.
- MEEN 134. Intermediate Fluid Mechanics** 3 sem. hrs.
- MEEN 135. Transport Phenomena** 3 sem. hrs.
- MEEN 136. Intermediate Thermodynamics** 3 sem. hrs.
- MEEN 148. Design of Engineering Experiments** 3 sem. hrs.
- MEEN 150. Applied Stress Analysis 1** 3 sem. hrs.
- MEEN 151. Advanced Design of Machine Elements** 3 sem. hrs.
- MEEN 152. Mechanical Systems Vibration** 3 sem. hrs.
- MEEN 153. Finite Element Method** 3 sem. hrs.
- MEEN 154. Introduction to Polymers and Polymer Composites in Design** 3 sem. hrs.
- MEEN 155. Fatigue and Fracture in Mechanical Design** 3 sem. hrs.
- MEEN 156. Optimal Design of Engineering Systems** 3 sem. hrs.
- MEEN 158. Mechatronics** 3 sem. hrs.
- MEEN 159. Topics in Mechanical Systems Analysis and Design** 3 sem. hrs.
- MEEN 161. Failure Analysis** 3 sem. hrs.
- MEEN 163. Powder Metallurgy** 3 sem. hrs.
- MEEN 165. Surface Engineering** 3 sem. hrs.
- MEEN 167. Mechanical Behavior of Materials** 3 sem. hrs.
- MEEN 168. Processing and Forming of Materials** 3 sem. hrs.
- MEEN 170. Introduction to Biomaterials Science and Engineering** 3 sem. hrs.
- MEEN 171. Topics in Materials Engineering** 3 sem. hrs.

MEEN 172. Optimization of Industrial Systems 3 sem. hrs.

MEEN 173. Industrial Simulation 3 sem. hrs.

MEEN 176. Ergonomics 3 sem. hrs.

MEEN 179. Topics in Manufacturing Engineering 3 sem. hrs.

MEEN 180. Metal Forming 1 3 sem. hrs.

MEEN 185. Welding Engineering 3 sem. hrs.

GRADUATE COURSES:

MEEN 201. Advanced Engineering Analysis 1 3 sem. hrs.

Matrices and linear algebra with applications. Tensor analysis and applications. Calculus of variation. Green's function techniques. Complex variable theory and applications. Topics in ordinary and partial differential equations. Offered occasionally.

MEEN 202. Advanced Engineering Analysis 2 3 sem. hrs.

Matrices and linear algebra with applications. Tensor analysis and applications. Calculus of variation. Green's function techniques. Complex variable theory and applications. Topics in ordinary and partial differential equations. Offered occasionally.

MEEN 203. Approximate Methods in Engineering Analysis 3 sem. hrs.

Treatment of approximate methods for solving various problems in engineering. Matrix methods, variational methods (e.g., Ritz, Galerkin, etc.), finite difference methods, finite element method. Offered occasionally.

MEEN 204. Advanced Fluid Mechanics 1 3 sem. hrs.

Further development of fluid flow theory starting with classic potential flow solutions. Numerical and analytical techniques for both inviscid and viscous fluid flows, including boundary layer theory and stability. Transition routes and chaos with an introduction to turbulence. Offered occasionally. *Prereq: MEEN 134 or equiv.; computer programming experience recommended.*

MEEN 205. Advanced Fluid Mechanics 2 3 sem. hrs.

Advanced physical and mathematical description of fluid flow systems, including the fundamentals of turbulence motion. The development of the Reynolds stress equations, processes that govern dissipation and statistical description of scales. Course includes the modeling techniques associated with turbulent velocity profiles as well as the development of zero, one and two equation closure models. Offered occasionally. *Prereq: MEEN 204; computer programming experience recommended.*

MEEN 206. Intermediate Thermodynamics 3 sem. hrs.

Fundamentals of thermodynamics, applications to property evaluation for nonreactive and reactive phenomena, modeling and analysis of nonreactive and reactive thermofluid

processes, devices, and systems. Offered occasionally. *Prereq: MEEN 114.*

MEEN 207. Energy Systems: Modeling, Simulation and Analysis of Energy Conversion Systems 3 sem. hrs.

Performance characteristics of energy conversion devices, and mathematical modeling thereof. Simulation of systems comprised of several devices and processes. Analytical methods for determining improved system configurations. Optimization of the design and operating parameters of a configuration. Case studies. Offered occasionally. *Prereq: MEEN 114.*

MEEN 208. Thermal Radiation Heat Transfer 3 sem. hrs.

Blackbody radiation characteristics. Non-black surface properties: emissivity, absorptivity and reflectivity and values for real materials. Blackbody radiation exchange and viewfactor algebra. Graybody exchange. Effects of non-diffuse, non-gray surface properties. Absorption-emission-scattering during transmission through media: transfer equation and approximate solutions. Emphasis on terrestrial solar and building thermal envelope through examples. Offered occasionally.

MEEN 209. Convective Heat and Mass Transfer 3 sem. hrs.

Principles and mechanisms of convective transports of energy and of chemical species associated with laminar and turbulent flows, including condensation and boiling. Calculation of heat and mass transport coefficients. Mathematical modeling, with applications to engineering devices involving several of these processes, with and without phenomenological coupling. Offered occasionally. *Prereq: MEEN 204.*

MEEN 210. Computational Fluid Mechanics 3 sem. hrs.

Review of the fundamental thermofluids science, mathematical and computational principles underlying modern CFD software. Utilization of software for representative applications. Individual student project devoted to a new application. Offered occasionally. *Prereq: MEEN 201 and MEEN 205; or cons. of instr.*

MEEN 215. Topics in Thermofluids Science and Engineering 1-3 sem. hrs.

Offered occasionally.

MEEN 221. Advanced Dynamics 3 sem. hrs. Kinematics of particles and rigid bodies. Basic principles of vector mechanics. Variational principles. Basic principles of analytical mechanics. Offered occasionally.

MEEN 222. Advanced Vibrations 3 sem. hrs.

Theory of vibration with applications. Natural modes of vibration for lumped parameter systems. Response of lumped systems with damping. Response of distributed parameter system including bars, beams, etc. Offered occasionally.

MEEN 231. Advanced Manufacturing 1 3 sem. hrs.

Emphasis on applying engineering skills to the solution of manufacturing problems. Topics include: quality control, vibration and control theory, robotics, numerical control machinery, work systems, heat transfer and materials. Offered occasionally.

MEEN 232. Advanced Manufacturing 2
3 sem. hrs.

Emphasis on applying engineering skills to the solution of manufacturing problems. Topics include: polymers, fabrication and machining techniques, software evaluation, digital logic and microprocessor applications. Offered occasionally.

MEEN 240. Applied Stress Analysis 2
3 sem. hrs.

Thick wall cylinders, rotating disks, initial stresses; stress concentration factors, cracks, discontinuity stresses; autofrettage, residual stresses; beams on elastic foundation, introduction to plates and shells, pressure vessel analysis. Offered occasionally.
Prereq: MEEN 150; or MEEN 151.

MEEN 244. Design and Manufacture of Composite Materials 3 sem. hrs.

Introduction to fiber/matrix materials systems with emphasis on continuous fiber-reinforced composites. Principles of anisotropic elasticity, classical lamination theory, and viscoelasticity. Analysis of mechanical, thermal, hygroscopic and combination loading of laminated composites. Review of manufacture/fabrication methods for advanced composites, consolidation techniques, and basic issues in the design of advanced composites. Offered occasionally.
Prereq: MEEN 154; or cons. of instr.

MEEN 248. Advanced Topics in Mechanical Design 3 sem. hrs.

Content to be announced each term course is offered. Topics may include: investigation of fatigue, creep, inelastic behavior of systems, design of coupler mechanisms, probabilistic mechanical design, etc. Offered occasionally.

MEEN 249. Topics in Systems Engineering 3 sem. hrs.

Content to be announced each term course is offered. Topics include: study of modern methods for modeling, analysis and simulation of deterministic engineering systems. Offered occasionally.

MEEN 254. Solidification Processing 3 sem. hrs.

Fundamentals of heat and mass flow that result in solidification. Application to single crystal growth techniques and to various casting techniques. Rapid solidification technology and applications. Use of the ternary phase diagram to describe solidification. Casting of semi-solid composite materials. Offered occasionally.
Prereq: MEEN 160 or equiv.

MEEN 263. Plastic Deformation and Strengthening Mechanisms in Materials 3 sem. hrs.

Theory of elasticity for isotropic solids. Theory of dislocations to include elastic models of dislocations and interactions between dislocations. Strengthening mechanisms in solids including work hardening, solid solution strengthening and precipitation hardening. Offered occasionally.
Prereq: MEEN 167; or cons. of instr.

MEEN 264. Creep, Fracture and Fatigue in Materials 3 sem. hrs.

Thermally activated plastic deformation. Mechanisms of creep and stress rupture in materials. Fatigue. Offered occasionally.
Prereq: MEEN 167; or cons. of instr.

MEEN 269. Statistical Models in Engineering 3 sem. hrs.

Development of statistical models in engineering and statistical analysis of data. Statistical concepts. Inference methods. Application of statistical models to component reliability and probability design. Probability plotting; Monte Carlo simulation. Offered occasionally.

MEEN 270. Advanced Topics in Engineering Mechanics 3 sem. hrs.

Content to be announced each term course is offered. Topics may include: study of elastic plates, shells, elasticity, plasticity, viscoelasticity, rheological modeling, etc. Offered occasionally.

MEEN 271. Advanced Simulation Modeling 3 sem. hrs.

Advance treatment of a simulation study including modeling, determining input probability distributions, simulation languages, verification, validation, variance reduction, and output analysis. Includes applications of simulation modeling in manufacturing systems. Offered occasionally.
Prereq: MEEN 173 or equiv.

MEEN 273. Computer Integrated Manufacturing 3 sem. hrs.

Primary objectives include the validation of the underlying philosophy behind Computer Integrated Manufacturing and the definition of characteristics of various components which constitute a C.I.M. environment. Enables students to understand the benefits of C.I.M. and also know how to upgrade conventional plants to a C.I.M. operation. Offered occasionally.
Prereq: MEEN 143 or equiv.

MEEN 278. Advanced Ergonomics/Human Factors Engineering 3 sem. hrs.

Fundamentals of ergonomics/human factors engineering (HFE) with emphasis on the application of basic principles to advances in engineering applications, research, and development. The following topics are included: engineering anthropometry, cumulative trauma disorders, low back disorders, electromyography, biomechanical modeling, and ergonomic guidelines. Students will write research papers in the above areas or in a related ergonomics/HFE field. Offered occasionally.
Prereq: MEEN 126 or equiv.; or cons. of instr.

MEEN 279. Topics in Manufacturing Systems Engineering 3 sem. hrs.

Content to be announced each term course is offered. Topics may include: study of quality, rapid prototyping, human factors engineering, artificial intelligence, neural networks, advanced engineering economy in the manufacturing environment, etc. Offered occasionally.

MEEN 280. Metal Forming 2 3 sem. hrs.

Elements of von Mises plasticity theory-stress and deformation states, constitutive equations, and flow rules; plane and axisymmetric behavior. Solution techniques - exact, slipline theory, upper and lower bounds, finite bending, deep drawing. Offered occasionally.
Prereq: MEEN 180 or equiv.

MEEN 286. Topics in Physiological Transport Phenomena 3 sem. hrs.

Course content announced each term offered. Topics could include: biorheology, hemodynamics, wave propagation, microcirculation, ther-

moregulation, diffusion and membrane transport, convective mass transport, biomechanics. Offered occasionally.

MEEN 295. Independent Study 1-3 sem. hrs.
Offered every term. *Prereq: Cons. of instr. and cons. of dept. ch.***MEEN 299. Master's Thesis 1-6 sem. hrs.**
Offered every term. *Prereq: Cons. of dept. ch.***MEEN 396. Seminar 0 sem. hrs.**

Scholarly presentations on current topics in mechanical engineering and related areas by visiting and resident investigators. Required of all full-time graduate students. Offered every term. S/U grade assessment.

MEEN 399. Doctoral Dissertation 1-12 sem. hrs.

Offered every term. *Prereq: Cons. of dept. ch.*

MEEN 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.

Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

MEEN 892. Continuous Enrollment — Half-Time 0 sem. hrs.

Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

MEEN 893. Continuous Enrollment — Full-Time 0 sem. hrs.

Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

NURSING (NURS)

Dean and Professor: Acord

Dean Emeritus: Klein

Associate Dean for Graduate Programs and Research and Professor: Miller

Associate Dean for Undergraduate Programs and Associate Professor: Krejci

Professor and Provost: Wake

Professor: Bull, Fehring, McLane (*Emeritus*),

Schank (*Emeritus*), Siegel (*Emeritus*)

Associate Professor: Frenn, Hanson, Ryan,

Theis (*Emeritus*), VandeVusse, Wallenborn

(*Emeritus*), Weiss, Wilson, Winters

Assistant Professor: Belknap, Bobay, Haglund,

Ramey

Adjunct Associate Professor: Malin

Clinical Associate Professor: Gosline, Hanks,

Murphy, O'Brien, Schoneman, Shaw

Clinical Assistant Professor: Anderson, Bratt,

Dressler, Harrod, Ivantic-Doucette, Kosmoski-

Goepfert, McShane, Paquette

Clinical Instructor: Berner, Culhane, Festge,

Glaserapp, Jensen, Mowers, Salentine,

Schroeter, Stauber, Stuber

Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREES OFFERED

Master of Science in Nursing, students are admitted under Plan B (non-thesis option) but Plan A (thesis option) is also offered; Post-

master's Certificate; Doctor of Philosophy

SPECIALIZATIONS

M.S.N.: Advanced Practice Nursing:

Acute Care (NP),
Adults (CNS or NP),
Children (CNS or NP),
Nurse-midwifery (CNS or NP),
Older Adults (CNS or NP);

Clinical Nurse Leader;

Health Care Systems Leadership

Post-master's Acute Care Nurse Practitioner,

Certificate: Adult Nurse Practitioner,
Gerontologic Nurse
Practitioner, Nurse-midwifery,
Pediatric Nurse Practitioner

Ph.D.: None

PROGRAM DESCRIPTIONS

MASTER OF SCIENCE IN NURSING

The master of science in nursing program prepares nurses for roles in advanced practice nursing or nursing administration. Graduates are academically eligible to seek formal professional certification in such areas as: nurse practitioner, clinical nurse specialist, nurse-midwife, nurse administrator or clinical nurse leader.

Advanced Practice Nursing:

Acute Care Nurse Practitioner

This specialization prepares the student to apply advanced clinical assessment skills to complex health problems commonly encountered by acutely ill adults across the health care continuum. Graduates will be academically eligible to take the national certification examination for the Acute Care Nurse Practitioner.

Advanced Practice Nursing:

Adults

This specialization prepares the student for the care of adults, including knowledge of human responses, health promotion and disease prevention, advanced physical assessment, diagnosis, and management of health problems. Graduates will be academically eligible to take the national certification exam for either Clinical Nurse Specialist or as an Adult Nurse Practitioner.

Advanced Practice Nursing:

Children

This specialization prepares the student for independent management of children and families seeking health care for simple to complex health problems. Graduates will be academically eligible to take the national certification examination for Pediatric Nurse Practitioner and Clinical Nurse Specialist in Pediatrics.

Advanced Practice Nursing:

Nurse-Midwifery

This specialization prepares the student for independent management of essentially normal newborns and women during the antepartum, intrapartum, and postpartum periods and for gynecologic care throughout the life span. Graduates will be academically eligible to take the national certification examination of the American Midwifery Certification Board, Inc.

Advanced Practice Nursing:

Older Adults

This specialization prepares the student for primary care and complex management of older adults with simple to complex health problems. Graduates will be academically eligi-

ble to take the national certification examination for Geriatric Nurse Practitioner or Clinical Nurse Specialist.

Clinical Nurse Leader

This specialization prepares the student to have competence in clinical outcomes management and health care environment management. Students complete core M.S.N. courses and a combination of illness management and health care systems leadership courses. These graduates remain at the point of care and assure patients receive health care in a safe, cost effective, timely manner by implementing lateral integration of care services.

Health Care Systems Leadership

This specialization prepares the student for the administration of nursing services in a variety of health care organizations. Graduates will be academically eligible to take the national certification examination for Nursing Administration. Subspecialty areas are offered using six elective credits. They are: Care Management Systems, Community Health Leadership, Informatics, Staff Development, Long Term Care Administration, and Conflict Resolution.

POST-MASTER'S GRADUATE CERTIFICATE

This program prepares the nurse who already has a master of science in nursing to become academically eligible for certification as an Advanced Practice Nurse.

DOCTOR OF PHILOSOPHY

The doctor of philosophy program in nursing prepares teacher-scholars. The curriculum focuses on vulnerable populations, which include persons at high risk for adverse health outcomes. Persons who are vulnerable may include such groups as the unborn, chronically ill, frail elders, impoverished children and the marginalized. The graduate of this doctoral program will have the ability to advance health care through teaching, research and health care leadership.

Doctoral education in nursing is built on the master's level nursing foundation. It is characterized by the acquisition of research skills necessary for the discovery and use of new nursing knowledge and for preparation for teaching roles.

MASTER OF SCIENCE IN NURSING — SECOND DEGREE DIRECT ENTRY FOR NON-NURSES

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 bachelor of science in nursing program objectives in an intense 15 month pre-M.S.N. phase and progress to graduate study. Students are then prepared in the M.S.N. program for nursing administration or advanced nursing practice roles in: acute care, adults, children, nurse-midwifery, or older adults.

Note: Entry into the master's phase of the program is conditional. See #5 below.

Admission Requirements for M.S.N. — Second Degree Direct Entry for Non-nurses

1. Baccalaureate degree in a discipline other than nursing with a G.P.A. of 3.00 or above, using a 4.00 system.
2. GRE scores (General Test only). Waived if applicant already has a master's degree or if undergraduate G.P.A. is 3.20 or above.
3. Completion of three recommendation forms.
4. Maintain an average of B or above each term, *and* completion of the following prerequisite courses with grade of C or above: 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): 3 credits.
5. Maintenance of 3.00 G.P.A. each term and every summer session in pre-M.S.N. phase.

MASTER OF SCIENCE IN NURSING — SECOND DEGREE DIRECT ENTRY FOR A.D.N. NURSES

This program facilitates students who have an associate's degree in nursing and also have a bachelor's degree in a discipline other than nursing to complete a master of science in nursing degree. Prior to completing courses in the option of choice, students must complete NURS 162, NURS 173, NURS 178 and NURS 179.

Admission Requirements for M.S.N. — Second Degree Direct Entry for A.D.N. Nurses

1. Baccalaureate degree in a discipline other than nursing with a G.P.A. of 3.00 or above, using a 4.00 system.
2. Associate's degree in nursing with a G.P.A. of 3.00 or above, using a 4.00 system.
3. GRE scores (General Test only). Waived if applicant already has a master's degree or if undergraduate G.P.A. is 3.20 or above.
4. Completion of three recommendation forms.
5. Resume and written statement of professional goals.
6. Official transcripts from all current and previous colleges/universities except Marquette.
7. Completion of the following prerequisite courses with grade of C or above: 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): 3 credits.

PREREQUISITES FOR ADMISSION

Applicants to the **master of science in nursing program** should have graduated with, or be about to graduate with, a bachelor's degree in nursing from a nationally accredited program with an upper division major in nursing. A cumulative undergraduate G.P.A. of 3.00 using a 4.00 system (4.00=A), is required.

Prior to or during the first term of study, all master of science in nursing applicants must have taken undergraduate classes in nursing research and a statistics course which included inferential analysis.

Applicants that select an Advanced Practice Nursing specialization must have taken an undergraduate course in health assessment. It is recommended that applicants to the Health Care Systems Leadership or to the Advanced Practice Nursing specializations in acute care, children or nurse-midwifery have a minimum of one year related professional experience.

Applicants to the **doctor of philosophy program in nursing** should have graduated with, or be about to graduate with, a master's degree in nursing from a nationally accredited program. Generally, a cumulative graduate G.P.A. of 3.30 using a 4.00 system (4.00=A) is recommended. A graduate level research course is a required prerequisite.

Familiarity with computers and the World Wide Web (e.g., electronic retrieval of data, word processing) is required for all applicants. Some courses use Web-enhanced teaching.

APPLICATION DEADLINE

The application deadline for the master of science in nursing direct entry program for non-nurses is January 12, 2007. For other graduate nursing programs, no official deadline exists; however, preference will be given to applications received before February 15 for fall 2007 financial aid consideration.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. (*For master's applicants only*) three completed recommendation forms prepared by previous or present employers and teachers familiar with graduate education in nursing.
4. (*For doctoral applicants only*) three letters of recommendation.
5. (*For master's applicants only*) GRE scores (General Test only). Waived if undergraduate G.P.A. is 3.20 or above.
6. (*For doctoral applicants only*) GRE scores (General Test only). Waived if applicant is Marquette M.S.N. graduate with G.P.A. of 3.70 or above.
7. A resume and written statement of professional goals, including reasons for pursuing graduate study. For doctoral applicants, a curriculum vitae and objectives/career intentions, including research interests.
8. (*For doctoral applicants only*) sample of scholarly writing.
9. (*For international applicants only*) a TOEFL score or other acceptable proof of English proficiency.

An interview is required for applicants to the Advanced Practice Nursing specializations in Acute Care Nurse Practitioner, Nurse-midwifery, and Children.

With the exception of Second Degree Direct Entry M.S.N. applicants, an applicant must be registered in the United States as a professional nurse. Graduates of nursing schools in foreign countries must successfully complete the examination administered by the Commission on Graduates of Foreign Nursing Schools and must be licensed in Wisconsin.

Upon acceptance to the graduate program, students must complete and submit the *Graduate*

Student Health Status Report form, information on CPR certification, and the criminal background check form, along with evidence of professional licensure and HIPAA training to the Office for Graduate Nursing Programs in the College of Nursing. Results of a T.B. skin test must be provided annually. The information is required for participation in the practica experiences and progression within the program.

Acute Care Nurse Practitioner students must demonstrate evidence of current Advanced Cardiac Life Support certification and have experience working with acutely ill adults before commencing with the first clinical practicum course.

JOINT PROGRAM OF STUDY M.S.N.-M.B.A. DEGREE

The College of Nursing, in conjunction with the College of Business Administration, offers a program of joint study leading to a master of science in nursing (M.S.N.) degree with a specialization in Health Care Systems Leadership and a master of business administration (M.B.A.). Students seeking admission to the joint program apply to the Graduate School and must meet the admission requirements for both the M.S.N. and M.B.A. programs. However, official test scores from the Graduate Management Admission Test (GMAT) may substitute for the GRE admission requirement in the College of Nursing. Because students are officially admitted into only one Marquette University graduate program at a time, applicants must indicate which program they intend to pursue and complete first, although once accepted for admission to both programs, students may take courses from both departments. Upon completion of the first program, the student will be officially admitted to the second program for completion of the remainder of the joint program.

Joint program students complete a total of 60 credits, including 6 credits of M.B.A. Foundation courses (BUAD 201, BUAD 202, BUAD 203), 12 credits of Nursing Core courses (NURS 200, NURS 207, NURS 209, NURS 291), 24 credits of M.B.A. Core courses (BUAD 210, BUAD 220, BUAD 224, BUAD 230, BUAD 240, BUAD 250, BUAD 262, BUAD 290), and 18 credits of Health Care Systems Leadership courses (HEAL 220, HEAL 241, HEAL 246, HEAL 248, NURS 244, NURS 247). A comprehensive examination in the nursing content area is required. BUAD 290, Strategic Management in a Global Economy, serves as the final integrating experience for the business content area. BUAD 290 may be taken only after completing all other core course requirements.

GENERAL INFORMATION

Clinical courses in the College of Nursing are restricted to students in the degree program. Various clinical facilities in the greater Milwaukee area, throughout Wisconsin, and in northern Illinois are utilized for practica.

While Marquette University is concerned about the professional advancement of its students, facilitates the process of certification, and provides excellent educational opportunities, it cautions that professional success in a chosen field requires, above all else, constant development of individual abilities, personal initiative, and a professional sense of commitment to fulfill all appropriate legal and technical responsibilities. Hence, the university assumes

no responsibility for the success of the students in obtaining educational certification or other types of professional licensure.

Licensure in Wisconsin is mandatory for employment with compensation.

The academic performance of all graduate students is evaluated at the end of each term. Students must maintain a grade point average of at least 3.00 in all course work. Unsatisfactory work includes the student's G.P.A. falling below 3.00.

ACCREDITATION

Marquette University College of Nursing is accredited by the Commission on Collegiate Nursing Education (One Dupont Circle, NW, Suite 530, Washington, D.C. 20036-1120; [202] 877-6791) and the American College of Nurse-Midwives (8403 Colesville Road, Suite 1550, Silver Spring, MD 20910; [240] 485-1800).

MASTER'S REQUIREMENTS

The following requirements are in effect for academic year 2006-2007. Requirements may change due to changes in national standards.

Nursing students are admitted to the Graduate School under Plan B (non-thesis option). Plan B students are not required to write a thesis but must take a comprehensive written or oral examination. Students may change to the Plan A (thesis) option if an official *Change of Plan Form* is submitted to the Office for Graduate Nursing Programs and is approved by the Graduate School. A comprehensive exam is not required under the Plan A option.

The number of credits required to complete a degree is based on the area of specialization. Students completing a thesis must enroll for six additional thesis credits.

Specialization	Credits Required
Acute Care Nurse Practitioner	42
Adults	42
Children	42
Nurse-midwifery	45
Older Adults	42
Clinical Nurse Leader	33
Health Care Systems Leadership	39

Students admitted to the master of science in nursing program will choose Advanced Practice Nursing (selecting Acute Care Nurse Practitioner, Adults, Children, Nurse-midwifery, OR Older Adults), Clinical Nurse Leader, or Health Care Systems Leadership. All students in the master of science in nursing program will take the four core courses and all courses listed for their specific program option. Clinical practicum experiences include a minimum of five hours per credit.

Core Courses for All Specializations

NURS 200 Theoretical Foundations of Nursing
NURS 207 Ethics in Health Care
NURS 209 Creating Nursing Care Systems
NURS 291 Nursing Research Design and Methodology

Specialization Course Requirements

1. *Advanced Practice Nursing: Acute Care Nurse Practitioner*
NURS 210, NURS 211, NURS 215,
NURS 216, NURS 250, NURS 251, NURS 252,
NURS 253, and NURS 254

2a. Advanced Practice Nursing:**Adults — Nurse Practitioner**

NURS 210, NURS 211, NURS 215, NURS 216, NURS 255, NURS 256, NURS 257, NURS 258, NURS 259, and 3 free elective credits

2b. Advanced Practice Nursing:**Adults — Clinical Nurse Specialist**

NURS 162 (taken for graduate credit), NURS 210, NURS 211, NURS 255, NURS 256, NURS 258, NURS 259, 6 credits of HEAL or NURS electives, and 3 free elective credits

3. Advanced Practice Nursing:**Children**

NURS 210, NURS 211, NURS 270, NURS 272, NURS 274, NURS 275, NURS 276, NURS 277, and NURS 278

4. Advanced Practice Nursing:**Nurse-midwifery**

NURS 210, NURS 211, NURS 215, NURS 261, NURS 280, NURS 282, NURS 283, NURS 286, NURS 288, and NURS 289

5. Advanced Practice Nursing:**Older Adults**

NURS 210, NURS 211, NURS 215, NURS 216, NURS 258, NURS 259, NURS 261, NURS 264, NURS 267, and 3 free elective credits

6. Clinical Nurse Leader

NURS 216, NURS 250, NURS 258, HEAL 245, HEAL 246, and 6 credits (variable credits per term) of NURS 237 (practica)

7. Health Care Systems Leadership

HEAL 220, HEAL 241, HEAL 246, HEAL 248, NURS 243, NURS 244, and NURS 247

POST-MASTER'S REQUIREMENTS

This program prepares the nurse who already has a master of science in nursing to become academically eligible for certification as an Advanced Practice Nurse. Practitioner programs are offered in the following specialties: Acute Care Nurse Practitioner, Adults, Geriatrics, Nurse-midwifery and Pediatrics. Specific information regarding application and course requirements may be obtained from the College of Nursing, Clark Hall, P.O. Box 1881, Milwaukee, WI 53201-1881, (414) 288-3810.

DOCTORAL REQUIREMENTS

The doctoral program in nursing is designed to prepare teachers of nursing and scholars who will contribute to the body of knowledge related to vulnerable populations. Graduates of the program will be prepared to:

1. Teach students to be nurses and advanced practitioners to be able to improve the health status of vulnerable populations.
2. Design and conduct independent research that will impact the health of vulnerable populations.
3. Develop, test, and refine theories as a basis for nursing science.
4. Analyze patterns of health and illness among vulnerable populations.
5. Synthesize research findings to provide leadership in health care.

CURRICULUM

The doctoral program is a 51 credit post-master of science in nursing program with course work in the following five categories:

Nursing Science (12 credits)

NURS 300, NURS 301, PHIL 258, and NURS 304

Research and Statistics (12 credits)

HEAL 302, HEAL 303,
And either:
EDPS 321 and EDPS 322
OR
PSYC 224 and PSYC 225

Teaching (9 credits)

NURS 232 and NURS 334,
And one of the following:
EDPS 362
OR
EDPL 337

Cognates (6 credits)

Six credits supportive of dissertation.

Dissertation (12 credits)

A doctoral student will follow a program of study defined, in conjunction with an adviser, on an approved *Doctoral Program Planning Form*. The student must complete all requirements listed on the *Doctoral Program Planning Form*, pass a qualifying examination, and successfully defend a dissertation to complete the program. The doctoral dissertation must represent an original research contribution and show high attainment and clear ability to do independent research.

COURSE DESCRIPTIONS**UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:****Health (HEAL)**

HEAL 144. International Health
3 sem. hrs.

HEAL 160. Epidemiology
3 sem. hrs.

HEAL 164. Natural Family Planning
3 sem. hrs.

HEAL 165. Natural Family Planning Practicum 3 sem. hrs.

Nursing (NURS)

NURS 124. Special Institute
1-3 sem. hrs.

NURS 162. Health Assessment for Registered Nurses 3 sem. hrs.

GRADUATE COURSES:**Health (HEAL)**

HEAL 208. Individual Study and Practice
1-3 sem. hrs.

Individual study and development of in-depth knowledge and skill in a selected area of health care. Experience and activities planned in an

area for specialization, based on aptitude and interests of the student. May be repeated for credit. *Prereq: Cons. of instr.*

HEAL 214. Seminar in Moral and Legal Implications of Health Care 3 sem. hrs.

The field of moral decision-making in health care and the legal implications. Open to all graduate students. Offered occasionally.

HEAL 220. Health Care Program Development 3 sem. hrs.

Principles of population assessment, critical analysis of data, program development, implementation and evaluation. Includes one credit of practicum. Offered occasionally. *Prereq: NURS 209; or cons. of instr.*

HEAL 222. Health Care Quality Improvement 3 sem. hrs.

Explores health care applications of quality improvement, including government and regulatory influences, standards and guidelines, quality programs and methods, and process redesign. Offered occasionally.

HEAL 240. The Environment of Healthcare Delivery 2-3 sem. hrs.

Overview of U.S. healthcare system, environmental influences, and current models for healthcare delivery (e.g., fee for service, modified fee for service, managed care, capitated care, IPOs, HMOs), and the ascendancy/descendency of various models in different geographic regions and in response to economic incentives. Offered annually. *Prereq: Enrolled in Graduate School.*

HEAL 241. Health Care Finance 3 sem. hrs.
Examination of financial principles, budgeting and reimbursement issues in health care. *Prereq: NURS 209; or cons. of instr.*

HEAL 245. Case Management 3 sem. hrs.
Care services coordination of individuals and families to maximize resources for optimal health outcomes. Emphasis on integration of clinical and management processes. Includes one credit of practicum. Offered occasionally. *Prereq: Health profession experience or cons. of instr.*

HEAL 246. Health Care Informatics 3 sem. hrs.

Study of informatics in health care with emphasis in information systems and use of communication technology. Includes evaluation of actual and potential applications of informatics in health care administration, clinical practice, research and education. Offered occasionally.

HEAL 248. Health Care Policy 3 sem. hrs.
Concepts of public policy including the political process. Analysis of health care issues using a variety of policy models.

HEAL 252. 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 295. Independent Study 1-3 sem. hrs.
Offered every term. *Prereq: Cons. of instr.*

HEAL 298. Selected Topics in Health

1-4 sem. hrs.

In-depth study of current issues in health care. Course content will be announced by term. Offered occasionally.

HEAL 302. Qualitative Research

3 sem. hrs.
Analysis of key qualitative research methods, issues related to these approaches, and the nature of knowledge generated.

HEAL 303. Quantitative Research

3 sem. hrs.
Exploration and analysis of advanced quantitative methodologies and issues related to these approaches. *Prereq: PSYC 224 which may be taken concurrently and PSYC 225 which may be taken concurrently.*

Nursing (NURS)

NURS 200. Theoretical Foundations of Nursing

3 sem. hrs.
Examination of knowledge paradigms, concepts, and theories of the discipline of nursing. Offered annually. *Prereq: Admitted to NURS program.*

NURS 207. Ethics in Health Care

3 sem. hrs.
Ethical frameworks are used to explore a variety of moral issues impacting nursing and health care. Offered annually.

NURS 208. Individual Study and Practice

1-3 sem. hrs.
Individual study and development of in-depth knowledge and skill in a selected area of nursing. Experience and activities planned in an area for specialization, based on aptitude and interests of the student. May be repeated for credit. Offered every term. *Prereq: Cons. of instr. and admitted to NURS program.*

NURS 209. Creating Nursing Care Systems

3 sem. hrs.
Study of systems and organizations. Application to health care delivery, analysis and development of innovative models, including entrepreneurial practices with emphasis on maximizing leverage of advanced practice nursing and its impact on health care delivery systems. Offered annually. *Prereq: Admitted to NURS program.*

NURS 210. Physiologic Concepts for Advanced Nursing Practice

3 sem. hrs.
Complex physiologic aspects of nursing care. Establishment of knowledge base for the provision of health care in an advanced nursing specialty. Offered annually. *Prereq: Admitted to NURS program.*

NURS 211. Pharmacology for Advanced Nursing Practice

3 sem. hrs.
Pharmacodynamics, major drug categories, and prescribing responsibilities, including case studies of clients with specific health problems. Offered annually. *Prereq: Admitted to NURS program.*

NURS 215. Advanced Assessment and Management of Episodic Health Problems

3 sem. hrs.
Assessment, differential diagnoses, interventions and evaluation of adults and older adults with acute, episodic, self-limiting conditions. Offered annually. *Prereq: NURS 211 which may be taken concurrently.*

NURS 216. Complex Health Problems

3 sem. hrs.

Analysis of patterns of common health problems and select treatment modalities common to adults and older adults. Offered annually. *Prereq: Admitted to NURS program and NURS 211.*

NURS 232. Curriculum and Instructional Strategies for Nursing

3 sem. hrs.
Provides knowledge base in curriculum development, including philosophical foundations and educational theories. Examines teaching/learning strategies specific to implementation of the instructional process; design and use of evaluation tools for classroom and clinical education. Offered occasionally. *Prereq: Admitted to NURS program.*

NURS 236. Curriculum and Instruction in Associate Degree Nursing

2 sem. hrs.
Designed for faculty in associate degree nursing program. Exploration of associate degree curriculum development including conceptual framework and competencies; related concepts of instruction including organization of learning opportunities, teaching strategies and performance evaluation. Offered occasionally. *Prereq: Admitted to NURS program.*

NURS 237. Clinical Nurse Leader Practicum

3-6 sem. hrs.
Clinical immersion to implement the role components of the clinical nurse leader including clinical outcomes and care environment management. *Prereq: NURS 200, NURS 207, NURS 209, NURS 216, NURS 250, NURS 291, HEAL 245, HEAL 246.*

NURS 243. Health Care Systems Leadership 1

3 sem. hrs.
Evolution and application of concepts and systems related to organizations, management and nursing. *Prereq: Admitted to NURS program and NURS 209.*

NURS 244. Health Care Systems Leadership 2

2-3 sem. hrs.
Human resource management and development. Focus on system interactions and interrelationships. Includes legal and ethical dimensions, quality improvement, and risk management. Includes 1 credit of practicum. *Prereq: Admitted to NURS program and NURS 243.*

NURS 247. Health Care Systems Leadership-Practicum

3 sem. hrs.
Advanced practicum in a selected administrative role and setting. Offered annually. Includes one credit of seminar, two credits practicum. *Prereq: Admitted to NURS program and NURS 244 which may be taken concurrently.*

NURS 250. Complex Acute Care Problems

3 sem. hrs.
Analysis of complex pathophysiological conditions commonly encountered among acutely ill adults with selection of appropriate treatment modalities. Emphasis on recognizing patterns of acute illness and on developing clinical reasoning. Offered annually. *Prereq: NURS 211 and NURS 215 which may be taken concurrently and NURS 216 which may be taken concurrently; NURS 210 may be taken concurrently.*

NURS 251. Advanced Nursing Care of the Acutely Ill 1-Practicum

3 sem. hrs.
Development of the clinical judgment process and advanced skills for collaborative care of adults experiencing acute illness in the hospital-based/tertiary care environment. Emphasis on systematic data gathering, documentation, health promotion, and primary, secondary, and tertiary risk reduction strategies. *Prereq: NURS 210 which may be taken concurrently and NURS 211 and NURS 215 and NURS 216 which may be taken concurrently and NURS 250 which may be taken concurrently.*

NURS 252. Advanced Nursing Care of the Acutely Ill 2-Practicum

3 sem. hrs.
Application of clinical judgment to advanced nursing care of complex adults and families experiencing acute illness in the hospital-based/tertiary care environment. Focus on diagnosis and treatment of complex health problems. *Prereq: NURS 251 and NURS 254 which may be taken concurrently.*

NURS 253. Advanced Nursing Care of the Acutely Ill 3-Practicum

3 sem. hrs.
Implementation of the acute care advanced practice role in providing nursing care to complex acutely ill adults. Emphasis on case management and coordination within and between systems. *Prereq: NURS 252.*

NURS 254. Advanced Acute Care Concepts and Issues

3 sem. hrs.
Analysis of concepts and issues in the advanced management of acute and critically ill adults, including therapeutic nursing interventions. *Prereq: NURS 251.*

NURS 255. Advanced Nursing of Adults 1-Practicum

3 sem. hrs.
Application of the clinical judgment process to advanced nursing of adults. Emphasis on systematic data gathering, documentation, health promotion, and risk assessment of adults across the life cycle. Offered annually. *Prereq: NURS 211 and NURS 215 and NURS 216 which may be taken concurrently and NURS 259 which may be taken concurrently.*

NURS 256. Advanced Nursing of Adults 2-Practicum

3 sem. hrs.
Illness management in adults in the context of the family and environment. Emphasis on diagnosis and therapeutic interventions. *Prereq: NURS 216 and NURS 258 which may be taken concurrently.*

NURS 257. Advanced Nursing of Adults 3-Practicum

3 sem. hrs.
Care of select populations with emphasis on management of complex illness processes. Focus on care coordination and aggregate interventions. *Prereq: Admitted to NURS program and NURS 256 and NURS 258.*

NURS 258. Concepts and Interventions for Adults and Older Adults with Health Problems

3 sem. hrs.
Theories, models, and management of chronic illness in adults. Evaluation of therapeutic nursing interventions using single case design. *Prereq: Admitted to NURS program and NURS 291 which may be taken concurrently.*

NURS 259. Health and Wellness of Adults and Older Adults 3 sem. hrs.

Theories and models of health and wellness for adults. Designing therapeutic nursing interventions to promote the health of individuals and aggregates.

NURS 261. Theoretical Constructs: Dimensions of Aging 3 sem. hrs.

Theory development in advanced gerontological nursing with emphasis on age-related changes, cultural dimensions, socioeconomic stressors, vulnerability, maturational crises and care at the end of life.

NURS 262. Health Promotion and Illness Prevention of Older Adults-Practicum 3 sem. hrs.

Analysis of factors to promote optimal functioning in the elderly and research based health promotion strategies. Advanced assessment and differential diagnosis. Implementation of nursing strategies for salutogenesis.

Prereq: Admitted to NURS program and NURS 215 which may be taken concurrently and NURS 261 which may be taken concurrently.

NURS 263. Illness Management and Nursing Therapeutics of Older Adults-Theory 3 sem. hrs.

Advanced study of hardy and frail elders experiencing health deviations with emphasis on prevention, restoration, palliation, and related interventions. *Prereq: Admitted to NURS program and NURS 211 and NURS 215 and NURS 216 which may be taken concurrently and NURS 261 which may be taken concurrently.*

NURS 264. Illness Management and Nursing Therapeutics of Older Adults-Practicum 3 sem. hrs.

Analysis of health problems and research-based interventions for hardy and frail elders. Continued skill development in advanced assessment and differential diagnosis. Implementation of advanced nursing strategies. *Prereq: Admitted to NURS program and NURS 263 which may be taken concurrently.*

NURS 267. Advanced Practicum: Care of Older Adults 3 sem. hrs.

Case management of aggregates of older adults with complex needs. Implementation of specialized knowledge and skills. Offered annually. *Prereq: Admitted to NURS program and NURS 264.*

NURS 268. Issues in Long Term Care Administration 3 sem. hrs.

Focus on long term care quality outcome management, rules and regulations, and reimbursement issues in a changing health care environment. Offered occasionally.

NURS 270. Seminar in Child and Family Health 3 sem. hrs.

Exploration of advanced concepts related to the physical, psychosocial and developmental dimensions of child and adolescent health. Analysis of family theories and models relevant to advanced practice nursing of children. *Prereq: Admitted to NURS program.*

NURS 272. Nursing Therapeutics for Acute/Episodic Illnesses in Children and Adolescents 3 sem. hrs.

Study of the theoretical basis for the diagnosis and case management of children and adolescents with common age-related acute or episodic illness. Focus on differential diagnosis and nursing therapeutics. *Prereq: Admitted to NURS program.*

NURS 274. Advanced Assessment in Parent/Child Nursing 3 sem. hrs.

Comprehensive health assessment of infants, children, and adolescents. Includes 1 credit practicum. Offered annually. *Prereq: Admitted to NURS program.*

NURS 275. Advanced Practice Nursing of Children: Role and Specialization 3 sem. hrs.

Study of the theoretical and empirical bases for management of children with complex and chronic health conditions. Theoretical foundation for the analysis and design of health care programs for children and their families. Analysis of pediatric advanced practice role in health systems. *Prereq: Admitted to NURS program and NURS 272.*

NURS 276. Advanced Nursing Care of Children and Families 1-Practicum 3 sem. hrs.

Assessment and intervention for children and families regarding common health concerns, with an emphasis on well child care. *Prereq: NURS 210 which may be taken concurrently and NURS 211 and NURS 270 which may be taken concurrently and NURS 274.*

NURS 277. Advanced Nursing Care of Children and Families 2-Practicum 3 sem. hrs.

Assessment and intervention for children and families with common to complex health concerns. Beginning development of indirect care skills. *Prereq: NURS 276.*

NURS 278. Advanced Nursing Care of Children and Families 3-Practicum 3 sem. hrs.

Assessment and intervention for children and families with common to complex health concerns. Refinement of direct and indirect care skills. *Prereq: NURS 209 and NURS 277.*

NURS 280. Advanced Concepts in Women's Health Care Management Across the Life Span 2-3 sem. hrs.

Strategies to promote health and wellness across the life span in the provision of primary care for women, emphasizing nurse-midwifery management. Sociocultural implications are examined in the environment impacting upon clients and providers. *Prereq: Admitted to NURS program and NURS 211 which may be taken concurrently; or cons. of instr.; (Non-nurse-midwifery students take theory-only portion for 2 credits; student nurse-midwives must enroll for 3 credits, including practicum.)*

NURS 282. Advanced Concepts in Antepartum Management 2-3 sem. hrs.

Study and application of nurse-midwifery process strategies to promote biopsychosocial and spiritual health in women and families experiencing pregnancy. Includes families with potential health deviations. *Prereq: NURS 280;*

or cons. of instr.; (Non-nurse-midwifery students take theory-only portion for 2 credits; student nurse-midwives must enroll for 3 credits including practicum.)

NURS 283. Advanced Concepts in Postpartum and Newborn Management 2-3 sem. hrs.

Postpartum nurse-midwifery management of mothers, neonates, and families, including those with potential health deviations.

Prereq: NURS 280; or cons. of instr.; (Non-nurse-midwifery students take theory-only portion for 2 credits; student nurse-midwives must enroll for 3 credits, including practicum.)

NURS 286. Nurse-midwifery Care During Labor and Birth 5 sem. hrs.

Nurse-midwifery management of women during the intrapartum period. Assessment of maternal-fetal status, with appropriate interventions and non-technologic approaches, in the context of family-centered care. Includes theory and practicum. Offered annually. *Prereq: Admitted to NURS program and NURS 215 and NURS 280 and NURS 283; or cons. of instr.*

NURS 288. Advanced Practicum in Nurse-Midwifery 8 sem. hrs.

Development of nurse-midwifery practice role through intensive clinical experience. Strengthening clinical practice and leadership for professional challenges in nurse-midwifery. Practicum hours to be determined by individual student's progression through program experience requirements. *Prereq: Admitted to NURS program and NURS 286.*

NURS 289. History and Trends in the Nurse-Midwifery Profession 2 sem. hrs.

History of midwifery and dynamic social forces affecting education regulation, growth, and development of the nurse-midwifery profession. Examination of nurse-midwives' research, legislation, and leadership in quality care for diverse populations of women and families across the life span. *Prereq: Admitted to NURS program.*

NURS 291. Nursing Research Design and Methodology 3 sem. hrs.

Study of scientific methodologies appropriate for research in nursing. Critique and utilization of research studies. Includes proposal development. Offered every term. *Prereq: Statistics.*

NURS 294. Advanced Clinical Nursing Research 3 sem. hrs.

Development of research designs and statistical evaluation appropriate for advanced clinical nursing. Includes instrumentation, measurement issues, multivariate designs, evaluation research, and qualitative methods. *Prereq: Admitted to NURS program and NURS 291.*

NURS 295. Independent Study 1-3 sem. hrs.

Offered every term. *Prereq: Cons. of instr.; and admitted to NURS program.*

NURS 298. Selected Topics in Nursing 1-4 sem. hrs.

In-depth study of current trends in nursing. Course content will be announced each term. Offered occasionally. *Prereq: Admitted to NURS program.*

NURS 299. Master's Thesis 1-6 sem. hrs.
Offered every term. *Prereq:* Admitted to *NURS* program; approved thesis proposal; cons. of associate dean.

NURS 300. Nursing Knowledge Development 3 sem. hrs.

Examination of paradigmatic, theoretical, and conceptual dimensions of the nursing discipline with an emphasis on strategies for knowledge generation. *Prereq:* PHIL 258 which may be taken concurrently.

NURS 301. Vulnerable Populations 3 sem. hrs.

Concepts, theories, and research relevant to vulnerable populations, with emphasis on the multiple contextual influences on health and illness.

NURS 304. Nursing Research Seminar and Practicum 1-3 sem. hrs.

Guided individual research experience. Directs students to develop skills related to grant writing, dissertation, and the conduct of research projects. *Prereq:* HEAL 302 or HEAL 303 or concurrent. Offered every term.

NURS 334. Residency in Nursing Education 1-3 sem. hrs.

Application of knowledge, theories, and skills to academic teaching in nursing. Offered every term. *Prereq:* NURS 232 which may be taken concurrently.

NURS 399. Doctoral Dissertation 1-12 sem. hrs.

Dissertation for doctorate in nursing candidates. Offered every term. *Prereq:* Cons. of dept. ch.; and admitted to *NURS* program.

NURS 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq:* Cons. of dept. ch.; and admitted to *NURS* program.

NURS 892. Continuous Enrollment — Half-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq:* Cons. of dept. ch.; and admitted to *NURS* program.

NURS 893. Continuous Enrollment — Full-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq:* Cons. of dept. ch.; and admitted to *NURS* program.

PHILOSOPHY (PHIL)

Chairperson and Associate Professor: South
Assistant Chairperson and Associate Professor: Foster

Professor: Anderson (*Emeritus*), Ashmore (*Emeritus*), Carter, Jones, Kainz (*Emeritus*), O'Malley (*Emeritus*), Tallon, Teske (*Donald J. Schuenke Chair*), Wreen, Zedler (*Emerita*)
Associate Professor: P. Coffey (*Emeritus*), Gibson, Goldin, Harrison, Ibañez-Noé, Krettek, Naus, Peressini, Prendergast (*Emeritus*), Rice (*Emeritus*), Rousseau (*Emerita*), Snow, Starr, R. Taylor, Twetten, Vandevelde, Vater
Assistant Professor: Adams, Bauer, Crockett, Flaherty, Luft, Monahan, Schmidt, Tobin
Adjunct Associate Professor: Stohrer

Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREES OFFERED

Master of Arts, students are admitted under Plan A (thesis option) but Plan B (non-thesis option) is also offered; Doctor of Philosophy

Note: Students in the social and applied philosophy specialization are admitted under Plan B only.

SPECIALIZATIONS

Master's: History of Philosophy, Social and Applied Philosophy

Doctoral: Ancient Philosophy, British Empiricism/Analytical Philosophy, Christian Philosophy, Early Modern European Philosophy, Ethics, German Philosophy, Medieval Philosophy, Phenomenology-Existentialism, Philosophy of Religion

PROGRAM DESCRIPTION

The Philosophy Department's master's program in the history of philosophy and the doctoral program are based on the history of philosophy, ancient through contemporary, as the necessary experience for a mind critically able to face contemporary philosophical issues. The master's program in social and applied philosophy provides rigorous philosophical training for individuals who are interested in working in a variety of non-academic contexts or for pursuing further graduate studies.

PREREQUISITES FOR ADMISSION

Applicants are expected to have 18 semester hours of undergraduate philosophy course work, six hours of which should be in survey courses (history of philosophy) for admission to the doctoral program or the master of arts program with a specialization in history of philosophy.

APPLICATION DEADLINE

Applicant files must be completed by February 15 for admission consideration. Applications for admission received after this date will be considered as space permits.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. A statement of purpose outlining applicant's achievements and intentions in philosophy.
4. Letters of recommendation from at least three professors or professionals familiar with applicant's academic work and/or academic background.
5. GRE scores (General Test only).
6. A sample of philosophical writing.
7. (*For international applicants only*) a TOEFL score or other acceptable proof of English proficiency.

JOINT PROGRAM OF STUDY M.A.-J.D. DEGREE

The Department of Philosophy, in conjunction with the Law School, offers a program of joint study leading to a master's degree in philosophy and a juris doctor degree. Students seeking admission to the joint program must apply to both the Graduate School and the Law School and must meet the admission require-

ments for each. Students start this joint program as a law student. Upon completion of the law program, students will be officially admitted to the philosophy program for completion of the remainder of the joint program.

Joint program students complete 81 credit hours in the Law School, 21 credit hours in philosophy, and nine credit hours in joint program courses.

To participate in the M.A.-J.D. program in social and applied philosophy or in history of philosophy, the law student must receive the prior written approval of the associate dean for academic affairs in the Law School and must comply with the regulations of the Graduate School. The student must have completed 27 credit hours at the Law School with a cumulative average of 3.00 before entering either master of arts program in philosophy. Students may seek admission to the joint program at any time, but must complete both programs in four years (six years for part-time students), in accord with Law School academic regulations.

In general, joint program students will pay tuition at the full-time (flat tuition) Law School rate while a full-time law student, regardless of whether or not they are taking additional graduate courses. Upon receiving the juris doctor degree, joint program students will pay Graduate School tuition at the per credit rate for graduate courses. Part-time law students will pay the per credit Law School rate for all courses.

Additional details about the M.A.-J.D. program are available on the Philosophy Department Web site, at the Philosophy Department office, or from the Law School Admissions office.

MASTER'S REQUIREMENTS

The Department of Philosophy offers two master of arts specializations in the philosophy program: history of philosophy, and social and applied philosophy.

History of philosophy: All master's students must complete the following core courses: PHIL 201, 202, 217, and 232.

A master's student may choose to be in either Plan A (thesis option) or Plan B (course option). Students are assumed to be in Plan A unless a formal request is made to and approved by the Graduate School.

In Plan A, the student must complete 24 credit hours of graduate-level course work and six credit hours of thesis work, pass a comprehensive examination, and submit an approved thesis. Also, the student must have reading knowledge of French or German, or another foreign language approved by the department. At least 18 credits of the course work requirement must be in philosophy and must include the four core courses. The comprehensive examination requires a critical knowledge of the philosophical classics and of contemporary philosophical literature.

In Plan B, the student must complete 30 credit hours of course work and pass a comprehensive examination. No essay or foreign language is required for the Plan B master's program. At least 18 credits of the course work requirement must be in graduate-level philosophy courses, including one course in ethics and the four core courses. Up to six credit hours of upper division undergraduate courses approved for graduate credit may be counted toward this

degree. Courses must be individually approved by the director of the graduate program. Plan B master's degrees are considered terminal degrees by the Department of Philosophy.

Social and applied philosophy (Plan B master's only): This program requires 30 hours consisting of the following: PHIL 266 and 302; one course from PHIL 201, 202, 210 or 217; one course from PHIL 226, 227, 231, 232 or 233; two electives from the graduate philosophy course offerings; PHIL 303 (Internship—6 credits) or PHIL 303 (3 credits) plus an additional philosophy elective; and two graduate level cognate courses from an area outside philosophy. The cognate courses are to be approved by the student's adviser and the coordinator of the master of arts social and applied philosophy specialization.

No comprehensive exam or foreign language is required for the Plan B master's program. Plan B master's degrees are considered terminal degrees by the Philosophy Department.

DOCTORAL REQUIREMENTS

A doctoral student in the philosophy program must complete a program of study defined on an approved *Doctoral Program Planning Form*. Normally, the student must complete 60 credit hours of graduate-level course work beyond the baccalaureate degree, plus 12 credit hours of dissertation work. The student also must complete the foreign language requirements, pass qualifying examinations (written and oral), and submit and successfully defend a dissertation.

Course work must include the four core courses: PHIL 201, 202, 217, and 232. With written approval from the department chair, up to 12 credit hours of required course work may be taken in other fields.

The doctoral candidate is expected to make use of research and reflection available in languages other than English. Two foreign languages are required. The program requires French or German and either French, German, Latin, or Greek for the second foreign language. In exceptional circumstances, an alternative foreign language may be substituted for the above list.

COURSE DESCRIPTIONS

GRADUATE COURSES:

PHIL 201. Plato 3 sem. hrs.

A study of Plato's thought, especially his ethics, epistemology, psychology and metaphysics. Offered fall term. *Prereq: Cons. of dept. ch.*

PHIL 202. Aristotle 3 sem. hrs.

A study of Aristotle's thought, especially his metaphysics, epistemology and psychology. Offered every fall term. *Prereq: Cons. of dept. ch.*

PHIL 209. Text/Seminar on Ancient Philosophy 3 sem. hrs.

Either (a) study of a specific period within Ancient Philosophy, such as Pre-Socratic thought or Roman moral philosophy, or (b) the intensive reading of a major work such as Plato's *Sophist* or *Theatetus* or Aristotle's *Metaphysics* or *Nicomachean Ethics*, or (c) the investigation of a theme running through Ancient Philosophy such as problems with the

veracity of perception, the ontological status of ideas, or Aristotle and the Peripatetics. Offered every fourth term. *Prereq: Cons. of dept. ch.*

PHIL 210. Augustine 3 sem. hrs.

The early philosophical dialogues and the *Confessions*, *The City of God*, and *The Trinity*, considered in their significance as sources of Christian thought. Offered every sixth term. *Prereq: Cons. of dept. ch.*

PHIL 212. Plotinus and Early Christian Neo-Platonists 3 sem. hrs.

A study of the origin and character of neoplatonic thought, especially its metaphysics, epistemology and psychology, and its appropriation by Christian thinkers. Concentration on writers such as Plotinus, Proclus, Boethius and Pseudo-Dionysius. Offered every sixth term. *Prereq: Cons. of dept. ch.*

PHIL 214. Medieval Islamic Thought 3 sem. hrs.

Islamic philosophical thought of the medieval period. Some or all of the following figures will be treated, and others may also be covered: al-Kindi, al-Farabi Ibn Sina (Avicenna), al-Ghazali, Ibn Rushd (Averroes) including Greek philosophical and Islamic theological foundations as well as the influence of Islamic philosophy on Christian and Jewish thought in the Middle Ages. Offered every sixth term. *Prereq: Cons. of dept. ch.*

PHIL 217. St. Thomas Aquinas 3 sem. hrs.

A study of St. Thomas Aquinas' philosophy, especially his metaphysics, epistemology, and psychology. Offered every spring term. *Prereq: Cons. of dept. ch.*

PHIL 222. Text/Seminar on Early or High Medieval Philosophy 3 sem. hrs.

Courses will be offered on individual thinkers, such as St. Anselm, St. Bonaventure, St. Albert the Great; or on specific texts; such as St. Thomas' *Treatise On Spiritual Substances*; or on problems, such as the nature of man according to St. Bonaventure or doctrines on Divine Illumination in the 13th century. Offered every fourth term. *Prereq: Cons. of dept. ch.*

PHIL 223. Text/Seminar on Later Medieval or Renaissance Philosophy 3 sem. hrs.

Courses will be offered on individual thinkers such as William of Ockham, Duns Scotus, Nicholas of Cusa, Giordano Bruno, Niccolo Machiavelli; or on themes running through these periods, such as the nature of man, or theories of knowledge, or the Platonism of the 15th and 16th centuries. Offered every sixth term. *Prereq: Cons. of dept. ch.*

PHIL 226. Descartes 3 sem. hrs.

A study of some principal works of Descartes. Offered every fourth term. *Prereq: Cons. of dept. ch.*

PHIL 227. Post-Cartesian Rationalism 3 sem. hrs.

A study of major works of the post-Cartesian rationalists: Spinoza and Leibniz. Offered every sixth term. *Prereq: Cons. of dept. ch.*

PHIL 230. Locke/Berkeley 3 sem. hrs.

A study of the major works of Locke and Berkeley, including Locke's *An Essay Concerning Human Understanding*, and Berkeley's *Principles of Human Knowledge*

and *Three Dialogues Between Hylas and Philonous*. Offered every sixth term. *Prereq: Cons. of dept. ch.*

PHIL 231. Hume 3 sem. hrs.

A study of some of Hume's major works, including either the *A Treatise of Human Nature* or the *Enquiry Concerning Human Understanding*, the *Enquiry Concerning the Principles of Morals* and/or the *Dialogues Concerning Natural Religion*. Offered every fourth term. *Prereq: Cons. of dept. ch.*

PHIL 232. Kant 3 sem. hrs.

A study of some principal works of Kant including the *Critique of Pure Reason*. Offered every spring term. *Prereq: Cons. of dept. ch.*

PHIL 233. Hegel 3 sem. hrs.

Hegel's system as found in the *Phenomenology of Spirit* or the *Logic*. Offered every fourth term. *Prereq: Cons. of dept. ch.*

PHIL 240. Philosophy of Process 3 sem. hrs.

An introduction to the metaphysical thought of process philosophers such as Bergson and Whitehead. Offered every sixth term. *Prereq: Cons. of dept. ch.*

PHIL 242. Husserl 3 sem. hrs.

A textual study of some principal works. Offered every sixth term. *Prereq: Cons. of dept. ch.*

PHIL 245. Classical American Philosophy 3 sem. hrs.

A textual study of the principal works of American philosophers, such as Peirce, James, Dewey. Offered every sixth term. *Prereq: Cons. of dept. ch.*

PHIL 250. Early Analytic Philosophy 3 sem. hrs.

A study of the early development of the Vienna Circle and of the principal works of Moore, Russell and Austin. Offered every sixth term. *Prereq: Cons. of dept. ch.*

PHIL 251. Contemporary Analytic Philosophy 3 sem. hrs.

A study of major post-positivist developments in the analytic tradition including the thought of figures such as Quine and Sellars. Offered every sixth term. *Prereq: Cons. of dept. ch.*

PHIL 252. The Philosophy of Law 3 sem. hrs.

A study of the various philosophical approaches to the basic problems and values in law. Offered every sixth term. *Prereq: Cons. of dept. ch.*

PHIL 253. Political Philosophy 3 sem. hrs.

Consideration of the genesis and justification of the state; questions concerning the best form of government; problems especially germane to democracy, such as the nature and justification of equality and liberty, and of the balance of power and the majority rule. Offered every sixth term. *Prereq: Cons. of dept. ch.*

PHIL 254. Text/Seminar on Nineteenth-Century Philosophy 3 sem. hrs.

Courses will be offered on major philosophers, such as Marx, Fichte, or Peirce; or on major texts, such as Hegel's *Logic*, or Kierkegaard's *Concluding Unscientific Postscript*, or on philosophical problems, such as the individual and the social order, or pragmatic views of knowl-

edge and truth. Offered annually. *Prereq: Cons. of dept. ch.*

PHIL 255. Problems in Logic 3 sem. hrs.
An investigation into logical and meta-logical problems of perennial and contemporary relevance. Offered every sixth term. *Prereq: Cons. of dept. ch.*

PHIL 256. Philosophy of Language
3 sem. hrs.
Topics such as the structure and function of language, philosophy and linguistics, and language and mind will be studied. Philosophers such as Austin, Morris and Chomsky will be considered. Offered every sixth term.
Prereq: Cons. of dept. ch.

PHIL 258. The Philosophy of Knowledge
3 sem. hrs.
A study of major epistemological problems and theories of knowledge. Offered every fourth term. *Prereq: Cons. of dept. ch.*

PHIL 259. The Philosophy of Science
3 sem. hrs.
A survey of basic problems and methods in contemporary philosophy of science. Problems arising from current space-time theory, quantum mechanics, and the use of variant models and methodologies in the exact sciences are emphasized. Offered every sixth term.
Prereq: Cons. of dept. ch.

PHIL 260. Philosophy of Mind 3 sem. hrs.
A study of what mind is and its relation to the body; various concepts related to the mental and to human action. Offered every sixth term.
Prereq: Cons. of dept. ch.

PHIL 265. Problems in Ethics 3 sem. hrs.
Various metaethical and normative problems will be considered, such as: values; the justification and nature of ethical norms; moral responsibility; moral failure; the relation of morality to religion, law, and aesthetics. Offered every fourth term. *Prereq: Cons. of dept. ch.*

PHIL 266. History and Theory of Ethics
3 sem. hrs.
A theoretical investigation into the moral dimensions of human life. The course will cover the principal traditions in Western moral philosophy as well as significant work in contemporary moral philosophy. Offered fall term. Cons. of dept. ch.

PHIL 267. Philosophy of Freedom 3 sem. hrs.
A systematic investigation of problems involved in the assertion of human freedom. Offered every sixth term. *Prereq: Cons. of dept. ch.*

PHIL 269. Natural-Law Ethics 3 sem. hrs.
Classical and/or contemporary theories of natural law. Offered every sixth term.
Prereq: Cons. of dept. ch.

PHIL 272. Aesthetics 3 sem. hrs.
Considers one or more of the following problems in aesthetic theory: expression, representation, art and knowledge, aesthetics and society, method. Offered every sixth term.
Prereq: Cons. of dept. ch.

PHIL 280. Problems in Metaphysics
3 sem. hrs.
The study of doctrines on the nature of ultimate reality; of associated topics such as substance,

relation, process or change, causality, universals, particulars, space, time, eternity, freedom, necessity; and of the meaning of metaphysics as a philosophical discipline. Offered every fourth term. *Prereq: Cons. of dept. ch.*

PHIL 281. Philosophy of Religion 3 sem. hrs.
Inquiry into the religious dimensions of human existence and into divine reality. Topics such as the following: religion as a cultural institution, religious experience, the existence and nature of God, the problem of evil, faith and reason, religious language, and the rationality of religious belief. Offered every sixth term.
Prereq: Cons. of dept. ch.

PHIL 284. Philosophy of History 3 sem. hrs.
Study of both critical and speculative philosophy of history. Problems such as the nature of the historian's inquiry, types of historical understanding, theories of historical explanation, the possibility of pattern and purpose or value in history. Offered every sixth term.
Prereq: Cons. of dept. ch.

PHIL 285. Recent Christian Metaphysics
3 sem. hrs.
A study of recent Christian metaphysical thought through one or more major figures, such as Marechal, Lonergan, Gilson, Tillich, or through thematic problems. Offered every sixth term. *Prereq: Cons. of dept. ch.*

PHIL 289. German Phenomenology-Existentialism 3 sem. hrs.
Reading and discussion of the works of such thinkers as Kierkegaard, Nietzsche, Heidegger, Jaspers and Scheler. Offered every sixth term.
Prereq: Cons. of dept. ch.

PHIL 290. French Phenomenology-Existentialism 3 sem. hrs.
A study of problems, such as meaning vs. absurdity, theism vs. atheism, and intersubjectivity vs. solipsism, in such thinkers as Sartre, Marcel, Camus and Merleau-Ponty. Offered every sixth term. *Prereq: Cons. of dept. ch.*

PHIL 291. Text/Seminar on Twentieth-Century Philosophy 3 sem. hrs.
A study of philosophical movements, such as existentialism, phenomenology, analysis, or pragmatism; or of specific philosophers, such as Sartre or Russell; or of major philosophical works, such as *Philosophical Investigations*, or *Being and Time*. Offered annually.
Prereq: Cons. of dept. ch.

PHIL 294. Inter-University Visitation
1-3 sem. hrs.
Prereq: Cons. of dept. ch.

PHIL 295. Independent Study 1-3 sem. hrs.
Offered every term. *Prereq: Cons. of dept. ch.*

PHIL 299. Master's Thesis 1-6 sem. hrs.
Offered every term. *Prereq: Cons. of dept. ch.*

PHIL 301. Seminar 1-3 sem. hrs.
Subjects and credits according to arrangement. Offered annually. *Prereq: Cons. of dept. ch.*

PHIL 302. Seminar in Applied/Professional Philosophy 3 sem. hrs.
Study of ethical issues which cut across professions and disciplines. Consideration given to issues such as human rights, allocation of

social resources, confidentiality, informed ethics, truth telling, etc. Offered spring term.
Prereq: PHIL 266 and cons. of dept. ch.

PHIL 303. Practicum in Philosophy
3-6 sem. hrs.
Internship designed to develop a student's ability to use philosophical thinking and concepts in dealing with problems which arise in the context of a specific job, vocation, or institutional setting. Students arrange placement on an individual basis. Offered fall, spring and summer terms. S/U grade assessment.
Prereq: Cons. of dept. ch.

PHIL 399. Doctoral Dissertation
1-12 sem. hrs.
Offered every term. *Prereq: Cons. of dept. ch.*

PHIL 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.
Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

PHIL 892. Continuous Enrollment — Half-Time 0 sem. hrs.
Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

PHIL 893. Continuous Enrollment — Full-Time 0 sem. hrs.
Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

PHYSICAL THERAPY

The College of Health Sciences offers a three-year professional program that leads to a doctor of physical therapy degree. Both current Marquette undergraduate students and transfer students with undergraduate degrees from other institutions are encouraged to apply for 10 to 20 spaces in the program.

Current Marquette students should contact the Department of Physical Therapy and complete an application through the Registrar. Deadline is February 1.

The Department of Physical Therapy will also admit a number of new-to-Marquette individuals to the fourth year (external transfers to the first professional year) of the program. The minimal requirements are as follows:

1. Candidates must possess a bachelor's degree.
2. Candidates must have completed the 22 credits of prerequisite course work. No applicant will be accepted with a G.P.A. below 2.40 and depending on the applicant pool, a higher G.P.A. may be required to successfully gain entry into the program. All prerequisite course work must have been taken at an accredited four-year institution.
3. Twelve credits of social sciences and/or humanities must have been completed as a liberal arts core.
4. Candidates must have completed 80 hours of validated experience in a physical therapy clinic as a volunteer or as an employee under the supervision of a physical therapist.
5. Official transcripts.
6. Official Graduate Record Examination scores.

An application may be obtained from the Department of Physical Therapy or the Physical Therapy Web site at <http://www.marquette.edu/chs/pt/admit.html#Professional>. The deadline

for submitting a complete application is February 1. The best candidates will be selected from the pool of applicants.

For more information about the doctor of physical therapy, contact the Department of Physical Therapy by phone at (414) 288-7161 or by mail at Marquette University, Department of Physical Therapy, P.O. Box 1881, Milwaukee, WI 53201-1881.

COURSE DESCRIPTIONS

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

Exercise Science (EXSC)

EXSC 192. Advanced Exercise Physiology
4 sem. hrs.

Physical Therapy (PHTH)

PHTH 515. Pathophysiology and Aging
4 sem. hrs.

PHTH 518. Physiology of Activity
3 sem. hrs.

PHTH 525. Kinesiology 1: The Upper Extremity 3 sem. hrs.

PHTH 545. Kinesiology 2: The Spine and Lower Extremity 3 sem. hrs.

PHTH 558. Neuroanatomy
4 sem. hrs.

PHTH 560. Integrated Medical Neuroscience
2 sem. hrs.

PHTH 570. Advanced topics in Biomechanics and Kinesiology
4 sem. hrs.

PHYSICIAN ASSISTANT STUDIES

The College of Health Sciences offers a professional curriculum that leads to a master's degree in physician assistant studies.

Entrance into the program is highly competitive. Applicants typically complete a series of prerequisites during their freshman and sophomore years at the university. Additionally, applicants are required to have completed either the GRE or ACT/SAT examinations and have significant health care experience. The curriculum consists of 21 consecutive months of didactic medical course work followed by a consecutive 12-month period of clinical clerkships. Successful completion of the curriculum qualifies graduates to sit for the National Certifying exam, which leads to licensure in most states. All components of the master's program including application materials and curriculum requirements are administered by the Department of Physician Assistant Studies. Additional information is available in Marquette University's *Undergraduate Bulletin* and at the physician assistant program's Web site, www.marquette.edu/chs/pa.

PHYSICS (PHYS)

Chairperson and Professor: Howes
Professor: Burch, Karkheck, Matthys, Mendelson (*Emeritus*), Tani (*Emeritus*)
Associate Professor: J. Collins
Assistant Professor: Kunz, Politano, Stockdale
Research Associate Professor: Sorbian
Visiting Assistant Professor: Mewes
Note: Faculty members and their ranks are for the 2005–2006 academic year.

Marquette University currently does not offer a graduate degree program in physics. However, certain upper division undergraduate courses in the Department of Physics have been approved for graduate credit and may be taken, as appropriate, by graduate students in other graduate programs. To earn graduate credit for an upper division course, students must have the approval of their major departments and must complete extra work in the course beyond that required for undergraduate credit.

COURSE DESCRIPTIONS

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

PHYS 112. Quantum Mechanics
3 sem. hrs.

PHYS 124. Modern Optics
3 sem. hrs.

PHYS 131. Electricity and Magnetism 1
3 sem. hrs.

PHYS 132. Electricity and Magnetism 2
3 sem. hrs.

PHYS 146. The Physical Basis of the Biological Environment 3 sem. hrs.

PHYS 148. Mathematical Methods for Physicists 3 sem. hrs.

PHYS 149. Computational Physics
3 sem. hrs.

PHYS 162. Introduction to Thermodynamics
3 sem. hrs.

PHYS 165. Introduction to Molecular Biophysics 3 sem. hrs.

PHYS 171. Atomic Physics
3 sem. hrs.

PHYS 172. Introduction to Nuclear and Elementary Particle Physics 3 sem. hrs.

PHYS 175. Introduction to Solid State Physics 3 sem. hrs.

PHYS 198. Topics of Special Interest in Contemporary Physics 3 sem. hrs.

POLITICAL SCIENCE (POSC)/INTERNATIONAL AFFAIRS (INAF)

Chairperson and Professor: Swank
Assistant Chairperson and Associate Professor: Barrington
Professor: Boles, Dobbs, Fleet, LeBlanc, McCormick, Thomas, Wolfe
Associate Professor: McAdams
Assistant Professor: Barrett, Hanley, Young
Adjunct Professor of American Government: O'Brien
Adjunct Professor of Political Philosophy: Rhodes
Visiting Assistant Professor: Giaimo, Murphy
Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREES OFFERED

Political Science

Master of Arts, students are admitted under Plan B (non-thesis option) but may request Plan A (thesis option)

International Affairs

Master of Arts, students are admitted under Plan B (non-thesis option) but may request Plan A (thesis option)

PROGRAM DESCRIPTION

The Department of Political Science at Marquette University offers master's programs aimed at preparing students for doctoral study in political science and international affairs and for careers in related fields. Programs are offered in the following two specialties: political science and international affairs. The department offers a joint bachelor's and master's degree program that enables students to earn a bachelor's and a master's degree in five years. In conjunction with the Law School, students also can pursue a joint master of arts-juris doctor (M.A.-J.D) program in political science or in international affairs. Through the combined program, full-time students can complete the juris doctor and master of arts degrees in only four years. Furthermore, law school graduates can pursue an accelerated master of arts degree through awards of transfer credit for work completed as part of the juris doctor degree. Joint degree programs are also available in conjunction with the communication and the business administration graduate programs.

PREREQUISITES FOR ADMISSION

An applicant to the Department of Political Science should have graduated with, or be about to graduate with, a bachelor's degree from an accredited institution in an undergraduate program sufficient in quality and scope to prepare the individual for specialized work in his or her chosen field.

APPLICATION DEADLINE

No official deadline exists for the political science or international affairs master's programs. However, applications submitted after the Graduate School's official financial aid deadlines will be considered only as space per-

mits, even if the applicant is not requesting financial aid. The deadlines for financial aid consideration are February 15 for the following fall term and November 15 for the following spring term.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation.
4. GRE scores (General Test only). Not required for five-year B.A.-M.A. applicants; M.A.-J.D. applicants may substitute LSAT scores for GRE scores; M.A.-M.B.A. applicants may substitute GMAT scores for GRE scores.
5. (*For international applicants only*) a TOEFL score or other acceptable proof of English proficiency.

BACHELOR'S-MASTER'S PROGRAM

The joint bachelor's and master's program allows students to earn both a bachelor's degree with a major in political science or international affairs and a master's degree in political science or international affairs in five years.

Students will complete 6-9 hours of graduate credit in political science or international affairs during their senior undergraduate year. These graduate courses double-count toward the undergraduate and graduate degrees. Should a student be denied admission to the master's program of choice (political science or international affairs), the courses will be counted toward the undergraduate degree. Upon completion of the first term as a master's candidate, the student must petition the Graduate School to transfer the courses taken as an undergraduate to the master's degree. Students may also request that appropriate upper division undergraduate courses completed during their senior year, which are in addition to those required by their major or by Arts and Sciences, be counted toward their master's degree. All remaining master's degree requirements may be completed during the subsequent summer, fall, and spring semesters.

Candidates for admission should have undergraduate junior status, have completed at least 3 upper division political science courses, and should have a political science G.P.A. of at least 3.50. Candidates for admission should submit transcripts and three letters of recommendation, but need not submit GRE scores. Candidates for admission to this program should notify the assistant chair of their intentions.

JOINT PROGRAMS OF STUDY M.A.-J.D. DEGREE

The Department of Political Science, in conjunction with the Law School, offers a program of joint study leading to a master's degree in political science or in international affairs and a juris doctor degree.

Students seeking admission to the joint program must apply to both the Graduate School and the Law School and must meet the admission requirements for each, but their application to the Graduate School may include LSAT scores in lieu of GRE scores. Students start

this joint program as a law student. Upon completion of the law program, students will be officially admitted to the political science or the international affairs program for completion of the remainder of the joint program.

Joint program students complete 81 credit hours in the Law School, 21 credit hours in political science, and 9 credit hours in joint program courses. In addition, applicants for the political science or international affairs master of arts program who already hold a J.D. degree may request that a maximum of 9 credits from their previous law studies be counted toward the fulfillment of their master of arts degree requirements.

In general, joint program students will pay tuition at the full-time (flat tuition) Law School rate while a full-time law student, regardless of whether or not they are taking additional graduate courses. Upon receiving the juris doctor degree, joint program students will pay Graduate School tuition at the per credit rate for graduate courses. Part-time law students will pay the per credit Law School rate for all courses.

Additional details about the M.A.-J.D. program are available from the Political Science Department office or from the Law School Admissions office.

M.A.-M.B.A. DEGREE

The Department of Political Science, in conjunction with the College of Business Administration, offers a program of joint study leading to a master of arts (M.A.) degree in political science or international affairs and a master of business administration (M.B.A.) degree. The program is designed for students whose interests overlap business and politics or business and international affairs. Joint degree students are able to complete both degree programs in less time than if both degrees were pursued separately.

Students seeking admission into the joint degree program must submit to the graduate school separate applications for admission to both programs, including two sets of required documentation, and must meet the admission requirements of each program. However, applicants may submit GMAT scores in lieu of GRE scores. Acceptance into one program does not guarantee acceptance into the other. If a student is accepted into one program and not the other, the student can still choose to accept the admission offer from the first program but would not be considered a joint degree student. Because students are officially admitted into only one Marquette University graduate program at a time, applicants must indicate which program they intend to pursue and complete first, although once accepted for admission to both programs, students may take courses from both departments. Upon completion of the first program, the student will be officially admitted to the second program for completion of the remainder of the joint program.

Joint degree students count 9 credits of course work in each program toward the required course work credits of the other program. Thus, 9 of the 40 credits required for the master of business administration degree will come from POSC courses, and 9 of the 30 credits required for the master of arts degree in political science or in international affairs will come from BUAD courses.

M.A. IN POLITICAL SCIENCE AND IN COMMUNICATION

The Department of Political Science, in conjunction with the J. William and Mary Diederich College of Communication, offers a program of joint study leading to a master of arts (M.A.) degree in political science and a master of arts (M.A.) degree in communication. The program is designed for students whose interests overlap politics and aspects of communication such as advertising, journalism, or broadcasting. Joint degree students are able to complete both degree programs in less time than if both degrees were pursued separately.

Students seeking admission into the joint degree program must submit to the graduate school separate applications for admission to both programs, including two sets of required documentation, and must meet the admission requirements of each program. Acceptance into one program does not guarantee acceptance into the other. If a student is accepted into one program and not the other, the student can still choose to accept the admission offer from the first program but would not be considered a joint degree student. Because students are officially admitted into only one Marquette University graduate program at a time, applicants must indicate which program they intend to pursue and complete first, although once accepted for admission to both programs, students may take courses from both departments. Upon completion of the first program, the student will be officially admitted to the second program for completion of the remainder of the joint program.

Joint degree students count 9 credits of course work in each program toward the required course work credits of the other program. Thus, 9 of the 36 credits required for the master of arts degree in communication will come from POSC courses, and 9 of the 30 credits required for the master of arts degree in political science will come from COMM courses.

MASTER'S REQUIREMENTS

A student in either political science or international affairs is admitted to a non-thesis program (Plan B) which requires 30 credit hours of course and seminar work. The Plan B student must pass written and oral comprehensive examinations to complete the program.

Students are presumed to be in Plan B unless a formal request to transfer to a thesis program (Plan A) is approved by the department chairperson and the Graduate School. Plan A requires 24 credit hours of course and seminar work and six credit hours of thesis work. The Plan A student must pass written and oral comprehensive examinations and submit an approved thesis to complete the program.

At least 18 credits of the 30 credit hour requirement for Plan B students (15 credits of the 24 credit hour requirement for Plan A students) must be fulfilled in strictly graduate level course work (courses numbered 200 or above). Up to 12 credit hours of 100-level courses may be approved for graduate credit for Plan B students (9 credit hours for Plan A students). With the approval of the department chairperson, a student may receive up to 9 credit hours toward the master of arts degree in cognate courses taken outside the department. Cognate fields

for the international affairs program include other areas of political science.

CORE SEMINARS

Students in the political science program must complete POSC 209 and three of the following core seminars: POSC 200, 202, 204 and 206.

Students in the international affairs program must also complete POSC 209, and the following three core seminars: POSC 204, 206 and 208. Students in the international affairs program will concentrate their remaining work in comparative and international politics courses.

If a student comes to the program with a very strong undergraduate background in one of the core fields, the requirement for that core seminar may be waived.

RESEARCH PAPERS

Students in either program, political science or international affairs, must complete two seminar-quality research papers prior to taking the comprehensive examinations. These papers must deal with significant questions and demonstrate rigorous analytical and, as appropriate, methodological skills. The instructors in whose courses the papers are written must certify that the student has fulfilled this requirement. Specific details and certification forms are available from the department office.

COMPREHENSIVE EXAMINATIONS

A candidate for the master of arts degree in political science must pass written and oral comprehensive examinations covering two of the following fields: political philosophy, American politics, comparative politics, international politics.

A candidate for the master of arts degree in international affairs must pass written and oral comprehensive examinations in the fields of comparative politics and international politics. The examinations normally are taken after the student has completed 24 credit hours of course work.

The written examination is based on comprehensive reading lists for each subfield, the student's course work, and sample questions provided in advance. The oral examination supplements the written examination and is based on the comprehensive reading lists and the student's course work. The examining committee is normally composed of three faculty members chosen by the department chairperson in consultation with the student and his or her adviser. Details on the examinations, the reading lists, and the sample questions are available from the department office.

COURSE DESCRIPTIONS

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

POSC 100. Citizens, Beasts, or Gods?
3 sem. hrs.

POSC 101. The Best Constitution
3 sem. hrs.

POSC 102. Democracy and Its Problems
3 sem. hrs.

POSC 104. Enlightenment Political Thought
3 sem. hrs.

POSC 105. Karl Marx
3 sem. hrs.

POSC 106. The Political Philosophy of Capitalism 3 sem. hrs.

POSC 107. Politics and Literature
3 sem. hrs.

POSC 108. Postmodern Politics
3 sem. hrs.

POSC 110. Business and Politics
3 sem. hrs.

POSC 111. Politics and Regulation
3 sem. hrs.

POSC 112. Business in American Politics: An Historical Approach 3 sem. hrs.

POSC 117. Urban Public Policy
3 sem. hrs.

POSC 118. Urban Politics
3 sem. hrs.

POSC 119. Politics of Race, Ethnicity, and Gender 3 sem. hrs.

POSC 121. Interest Group Politics
3 sem. hrs.

POSC 122. Religion and Politics
3 sem. hrs.

POSC 123. Political Organizations
3 sem. hrs.

POSC 124. Elections, Parties and Political Opinion 3 sem. hrs.

POSC 126. Media and Politics in the U.S.
3 sem. hrs.

POSC 128. The United States Congress
3 sem. hrs.

POSC 129. National Security Policy
3 sem. hrs.

POSC 130. The American Presidency
3 sem. hrs.

POSC 133. Constitutional Law
3 sem. hrs.

POSC 134. Civil Liberties
3 sem. hrs.

POSC 135. American Public Policy
3 sem. hrs.

POSC 136. Problems in Civil Liberties: Free Speech 3 sem. hrs.

POSC 137. Problems in Civil Liberties: Privacy 3 sem. hrs.

POSC 141. Public Policy in Industrial Democracies 3 sem. hrs.

POSC 142. European Politics
3 sem. hrs.

POSC 143. Politics, Economics, and Democracy 3 sem. hrs.

POSC 145. Democracy, Authoritarianism and Totalitarianism 3 sem. hrs.

POSC 148. Modern Revolutions
3 sem. hrs.

POSC 152. Russian and Post-Soviet Politics
3 sem. hrs.

POSC 154. Chinese Politics
3 sem. hrs.

POSC 155. Japanese and Korean Politics
3 sem. hrs.

POSC 156. Latin American Politics
3 sem. hrs.

POSC 158. Politics of the Indian Subcontinent 3 sem. hrs.

POSC 159. Third World Politics
3 sem. hrs.

POSC 165. International Law
3 sem. hrs.

POSC 167. International Organization
3 sem. hrs.

POSC 170. United States Foreign Policy
3 sem. hrs.

POSC 173. International Politics of Europe
3 sem. hrs.

POSC 174. International Politics of the Middle East 3 sem. hrs.

POSC 175. International Politics of Asia
3 sem. hrs.

POSC 176. United States-Latin American Relations 3 sem. hrs.

POSC 177. Politics of the World Economy
3 sem. hrs.

POSC 178. World Conflict and Security
3 sem. hrs.

POSC 179. Politics of the Illicit Global Economy 3 sem. hrs.

POSC 182. Politics of the Internet
3 sem. hrs.

POSC 191. The Logic of Social Inquiry: The Kennedy Assassination 3 sem. hrs.

POSC 198. Topics in Political Science
2-3 sem. hrs.

GRADUATE COURSES:

Note: All classes require consent of adviser, or graduate program director, or department chair.

POSC 200. Political Philosophy 3 sem. hrs.
Selected classics and commentaries in Western political philosophy. Extensive reading, oral presentation, short papers. Offered alternate years. *Prereq:* Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.

POSC 202. American Politics 3 sem. hrs.
The development of the field of American politics. Currently used concepts and approaches. Extensive reading, short papers, and discussion. Offered alternate years. *Prereq:* Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.

POSC 204. Comparative Politics 3 sem. hrs.
The development of the field of comparative politics. Currently used concepts and

approaches. Extensive reading, short papers, and discussion. Offered alternate years.

Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.

POSC 206. International Politics 3 sem. hrs.

The development of the field of international politics. Currently used concepts and approaches. Extensive reading, short papers, and discussion. Offered alternate years.

Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.

POSC 208. International Political Economy 3 sem. hrs.

The development of the study of international political economy. Currently used concepts and approaches. Extensive reading, short papers, and discussion. Offered alternate years.

Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.

POSC 209. Contemporary Political Research 3 sem. hrs.

Approaches to the scientific study of politics; data-collection techniques; case studies, the comparative method, statistical analysis. Offered alternate years. *Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.*

POSC 229. Research Seminar in Political Philosophy 3 sem. hrs.

Student research in a broad area of political philosophy. Seminars will focus on individual thinkers (e.g., Plato, Aristotle, Machiavelli, Rousseau) or on contemporary problems. May be taken more than once. Offered alternate years. *Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.*

POSC 231. Elections and Voters 3 sem. hrs.

Why voters vote the way they do, including policy preferences, partisanship, and retrospective assessments. The dynamics of elections including the role of media, other elites, money, and interest groups. Offered occasionally.

Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.

POSC 233. Interests Groups 3 sem. hrs.

How various kinds of organizations attempt to exercise political influence, including the use of incentives to attract members, lobbying, attempts to influence public opinion, involvement in electoral politics, and litigation. Offered occasionally. *Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.*

POSC 237. Congress and the Presidency 3 sem. hrs.

Examination of major literature, theories and concepts used to understand the relationship between the Congress and the presidency. Offered alternative years. *Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.*

POSC 241. Women & Public Policy 3 sem. hrs.

The development of public policies to advance the status of women throughout U.S. history, with an emphasis on 1961-date. The role of women's groups and social movements. Offered occasionally. *Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.*

POSC 249. Research Seminar in American Politics 3 sem. hrs.

Student research in a broad area of American politics. Potential topics include, but are not limited to, Metropolitan Politics, The American Political Economy in Comparative Perspective, Problems in Civil Liberties. May be taken more than once. Offered occasionally. *Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.*

POSC 252. European Politics 3 sem. hrs.

The evolution of the European nation-state system. The origins, evolution, and transformation of electoral and party systems, modes of interest representation, and national political institutions. The ascent and crisis of the Keynesian welfare state. Variations in national models of capitalism and their impacts on politics. The evolution and contemporary politics of European integration. Globalization and European political economies. Offered alternate years. *Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.*

POSC 256. Chinese Politics 3 sem. hrs.

China's problems and prospects. Economic and political reforms. International relations. An overview and history of relevant literature. Offered occasionally. *Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.*

POSC 260. Comparative Democratization 3 sem. hrs.

Definitions of democracy and democratization; causes of regime transition and consolidation; market economics and democracy. Offered occasionally. *Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.*

POSC 261. Comparative Political Economy of Advanced Industrial Societies 3 sem. hrs.

The relationships between capitalism and democracy. The impact of economics on the development and operation of democratic institutions, political behavior, and public policy. The impact of politics on economic development, performance and policy. The political economy of the welfare state. The transition to post industrial society. Globalization and the democratic nation state. Offered alternate years. *Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.*

POSC 262. Politics of Development 3 sem. hrs.

The interplay between economic growth and the development of political institutions and practices, looking at both the historical experiences of advanced industrial societies and those of developing countries currently attempting to expand the capabilities of both their economies and their political institutions. Emphasis on the political factors and conditions on which economic development depends, and on how such growth and expansion in turn affect the political order. Offered occasionally. *Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.*

POSC 263. Political Economy of East Asia 3 sem. hrs.

Considers topics in the Political Economy of East Asia such as the rise of Japan and the Four Tigers, the Japanese economy in the

1990s, the East Asian Financial Crisis, the reform of the Chinese economy, economic relations among the East Asian Countries, and the relationship between East Asian economies and the world economy. These topics are considered as in light of various theories of political economy and theories of political economy are evaluated in light of developments in East Asia. Offered occasionally. *Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.*

POSC 264. Comparative Nationalism 3 sem. hrs.

Definitions of nation and nationalism; causes of nationalism; nationalism and democracy; modern nationalism in Europe, Asia and Africa. Offered occasionally. *Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.*

POSC 269. Research Seminar in Comparative Politics 3 sem. hrs.

Student research in comparative politics. Seminars will focus on traditional comparative politics or contemporary problems. May be taken more than once. Offered occasionally. *Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.*

POSC 271. U.S. Foreign Policy 3 sem. hrs.

Policies of the United States toward other nations; policy formation. Offered occasionally. *Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.*

POSC 273. International Politics of Asia 3 sem. hrs.

Security issues among Asian states. The political economy of Asia. Offered occasionally. *Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.*

POSC 283. Nations, States, and Nationalism 3 sem. hrs.

Explores the origins and nature of nations, states, nationalism and violent secessionist movements. Addresses differing concepts of the ethnic and civic nations, the rationale for nation-states as against multiethnic states, and the sources of violent nationalisms. The core of this research seminar will address the conflicting principles of the right of national self-determination as demanded by various ethnic groups, as against the territorial integrity and sovereignty of states as invoked by national governments. Students will be expected to write a research paper on a selected topic that relates to the above issues. Offered occasionally. *Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.*

POSC 285. Globalism and Crime 3 sem. hrs.

Theories of globalization, state sovereignty, and transnational organized crime; politics of gray and black markets; spatial dimensions of transshipment, global cities; organized crime and state power; intersection of public and private authority in managing transborder flows; drug trafficking, money laundering, and migrant smuggling and trafficking are among the subjects explored. Offered occasionally. *Prereq: Cons. of dept. ch.; cons. of graduate prog. dir. or cons. of adviser.*

POSC 287. International Security 3 sem. hrs.
Covers the theories, concepts, and issues underlying conflict and security in the contemporary world. Includes classical and modern perspectives on war and peace, the sources and causes of civil wars and regional conflict, and the prospects for arms control and world peace-keeping operations. Students will be expected to write a research paper on a selected topic concerning contemporary international security. Offered occasionally.
Prereq: Cons. of dept. ch., cons. of graduate prog. dir., or cons. of adviser.

POSC 288. International Human Rights 3 sem. hrs.
The development of international human rights; measures to promote and protect human rights at the global and regional levels. Offered occasionally. *Prereq: Cons. of dept. ch., cons. of graduate prog. dir., or cons. of adviser.*

POSC 289. Research Seminar in International Politics 3 sem. hrs.
Student research in international politics. Seminars will focus on traditional international topics of international politics or contemporary problems. Seminar topics may include Japanese and German foreign policy. Offered occasionally. *Prereq: Cons. of dept. ch., cons. of graduate prog. dir., or cons. of adviser.*

POSC 294. Internship in Political Science 1-3 sem. hrs.
Practical learning experience in politics. Requires appropriate written work relating the experience to appropriately broad academic literature on the subject. Arrangements to be worked out by student, faculty member and agency concerned. Normally may be taken only once. Offered every semester. S/U grade assessment. *Prereq: Cons. of dir. of graduate studies; degree status in the POSC or INAF program; and at least one related course.*

POSC 295. Independent Study 1-4 sem. hrs.
Offered every semester. *Prereq: Cons. of dept. ch., cons. of graduate prog. dir., or cons. of adviser.*

POSC 299. Master's Thesis 1-6 sem. hrs.
Offered every semester. *Prereq: Cons. of dept. ch., cons. of graduate prog. dir., or cons. of adviser.*

POSC 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.
Fee. S/U grade assessment. *Prereq: Cons. of dept. ch., cons. of graduate prog. dir., or cons. of adviser.*

POSC 892. Continuous Enrollment — Half-Time 0 sem. hrs.
Fee. S/U grade assessment. *Prereq: Cons. of dept. ch., cons. of graduate prog. dir., or cons. of adviser.*

POSC 893. Continuous Enrollment — Full-Time 0 sem. hrs.
Fee. S/U grade assessment. *Prereq: Cons. of dept. ch., cons. of graduate prog. dir., or cons. of adviser.*

PSYCHOLOGY

COUNSELING See COUNSELING AND EDUCATIONAL PSYCHOLOGY (COEP)

COUNSELING PSYCHOLOGY See COUNSELING AND EDUCATIONAL PSYCHOLOGY (COEP)

EDUCATIONAL PSYCHOLOGY See COUNSELING AND EDUCATIONAL PSYCHOLOGY (COEP)

CLINICAL PSYCHOLOGY See PSYCHOLOGY, CLINICAL (CLPS)

PSYCHOLOGY, CLINICAL (CLPS)

Chairperson and Associate Professor:

Wierzbicki

Assistant Chair and Associate Professor:

Nielson

Professor: Franzoi, Guastello, Lueger,

Quereshi (*Emeritus*), Sheikh

Associate Professor: Czech (*Emeritus*),

de St. Aubin, Grych, McDonald (*Emeritus*),

R. Nash, Saunders

Assistant Professor: Gerdes, Kaugars, Oswald, Sanders, Siderits

Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREES OFFERED

Master of Science; Doctor of Philosophy

PROGRAM DESCRIPTION

The clinical psychology program offers courses and training leading to the degree of master of science in clinical psychology and to the degree of doctor of philosophy in clinical psychology. Students in the doctoral program must acquire a master of science degree as they progress toward their doctoral degree. The program is accredited in Clinical Psychology by the American Psychological Association (APA). Students receive a solid foundation in scientific areas of psychology, which are the bases of clinical applications, and in the historical foundations of psychology. Training in research skills, such as statistics, measurement, and research methods, ensures competence in critically evaluating one's own and other's clinical work. Students become competent in professional practice skills such as assessment, interventions, and consultation. Supervised clinical experiences are planned throughout the curriculum. Practica are available at the Department of Psychology's Center for Psychological Services and with collaborating agencies in the Milwaukee urban area. Graduates are prepared to be clinical psychologists, teachers, scholars, consultants, and administrators.

PREREQUISITES FOR ADMISSION

The applicant is expected to show evidence of adequate preparation in psychological and related sciences. Students admitted to other graduate programs who desire a minor in psychology must fulfill the same prerequisites as students working toward master's and doctoral degrees in psychology.

The following courses are prerequisites to graduate study in the clinical psychology program: general psychology, psychological measurements and statistics, experimental psychology (with laboratory), personality theory, and abnormal psychology; plus two additional courses chosen from the following: psychology of learning, psychological testing, history and systems of psychology, biopsychology (physiological psychology), social psychology, and developmental psychology. One year of laboratory science in physics, biology, or chemistry, an undergraduate course in calculus, and a course in logic are strongly recommended.

APPLICATION DEADLINE

January 15 For both the terminal master's program and the doctoral program.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. A statement of purpose, in letter form, briefly indicating educational and vocational plans.
4. Three letters of reference from individuals familiar with the applicant's academic work and/or research experience.
5. Graduate Record Examination (GRE) test scores (General Test and Subject Test in psychology).
6. (*For international applicants only*) a TOEFL score or other acceptable proof of English proficiency.

The highest ranking applicants will be invited to an interview with the Psychology Department's Graduate Admission Committee.

MASTER'S REQUIREMENTS

Students enrolled in the terminal master's program are admitted under the Plan B option. To receive a master's, students must complete a minimum of 42 credit hours of course work beyond their baccalaureate degree, write an essay, and pass an oral defense of the essay.

The essay is supervised by a member of the faculty and earns no credit. The defense is overseen by a committee of three department faculty and serves as the comprehensive exam. Required courses include: PSYC 224, 237, 240, 241, 250, 251, 252, 297, 301, 302, and 353; 6 credit hours of graduate-level electives; plus two of the following three courses: PSYC 202, 211, and 232.

DOCTORAL REQUIREMENTS

A doctoral student must complete a program of study defined, in conjunction with the director of clinical training, on an approved *Doctoral Program Planning Form*. Students obtain a master's degree while in the doctoral program. The program requires a total of 78 credit hours of course work beyond the

baccalaureate degree including: semesterly enrollment in and attendance at a non-credit colloquium (PSYC 297), a first-year research project, submission of a research-based master's essay, successful completion of a doctoral qualifying examination, 12 credit hours of dissertation work, submission of an approved dissertation and an approved internship.

The doctoral program in clinical psychology requires a sequence of courses recommended by the American Psychological Association: 21 credit hours in substantive core courses (PSYC 201, 202, 211, 223, 232, 235, 237), 6 credit hours in assessment (PSYC 240, 241), 12 credit hours in intervention (PSYC 250, 251, 252, elective), 6 credit hours in practice core courses (PSYC 353), 3 credits of consultation/supervision (PSYC 354), 6 credit hours in professional practice (PSYC 301, 302), 9 credit hours in the research core courses (PSYC 224, 225, 226), 12 credit hours of dissertation credit (PSYC 399), and 3 credit hours of graduate-level electives.

The student is required to complete a satisfactory research-based master's essay (Plan B option) and pass an oral defense of the essay. The defense is overseen by a committee of three department faculty and the defense constitutes the comprehensive exam. Students who successfully defend their master's essay and who have completed at least 36 credit hours of study are awarded the master's degree. A doctoral qualifying examination is required to determine readiness and eligibility to proceed to the final years of the program.

The doctoral student must complete an internship approved by the Psychology Department. Before the student is permitted to apply for internship, personal and professional readiness must be verified through meeting with the director of clinical training. Permission will be granted only to students who have scheduled the defense of the dissertation proposal. Students may not accept internship interviews unless the proposal has been approved.

A public defense of the dissertation will be conducted only after the student has completed all other formal requirements for the doctoral degree, with the possible exception of the internship. To conduct research projects, permission from the university Institutional Review Board must be obtained.

COURSE DESCRIPTIONS

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

Psychology (PSYC)

PSYC 107. The Psychology of the Exceptional Child 3 sem. hrs.

PSYC 114. Human Factors Engineering 3 sem. hrs.

PSYC 127. Principles of Psychological Testing 3 sem. hrs.

PSYC 129. Sensory Processes and Perception 3 sem. hrs.

PSYC 131. The Psychology of Individual Differences 3 sem. hrs.

PSYC 132. Theories of Personality 3 sem. hrs.

PSYC 138. Childhood Psychopathology 3 sem. hrs.

PSYC 145. Psychology of Language 3 sem. hrs.

PSYC 160. Psychology of Religion 3 sem. hrs.

PSYC 165. Human Sexuality 3 sem. hrs.

PSYC 166. Psychology of Gender Roles 3 sem. hrs.

PSYC 170. The Psychology of Death and Dying 3 sem. hrs.

PSYC 180. The Psychology of Fantasy and Imagination 3 sem. hrs.

PSYC 198. Selected Topics in Psychology 3 sem. hrs.

GRADUATE COURSES:

Psychology (PSYC)

PSYC 201. History and Theoretical Foundations of Psychology 3 sem. hrs.

The history of psychology as a scientific discipline and of clinical psychology as a profession. Current relevant issues in the philosophy of science. Relationship between different basic theoretical assumptions, personality theories, and perspectives on treatment. Theoretical issues in the study of individual differences and clinical interventions. Offered biennially. *Prereq: Cons. of instr. or admission to clinical program.*

PSYC 202. Advanced Developmental Psychology 3 sem. hrs.

Presents a wide variety of theoretical and empirical approaches to understanding the development of the human being over the entire life course. Class readings and discussions provide the student with the debates, concepts, methods, and findings present in the current scholarly dialogue concerning life span developmental psychology. Offered annually. *Prereq: Cons. of instr. or admission to clinical program.*

PSYC 204. Industrial Psychology and Organizational Development 3 sem. hrs.

An experiential seminar for in-depth study of organizational diagnosis, change and development processes, motivation dynamics, creativity and innovation, leadership and group processes, negotiation, organizational culture and structure. Workshop format features interactive learning. Includes new trends from organizational research. Offered occasionally. *Prereq: PSYC 125 or equiv.; and cons. of instr.*

PSYC 205. Personnel Selection 3 sem. hrs. Theory and contemporary applications concerning job analysis; ability, aptitude, and personality, and other forms of pre-employment testing; racial fairness and bias in testing; performance appraisal; utility analysis for selection techniques; special selection requirements for management, sales, creative people, and other professionals; career choice and planning composition of work groups. Offered occasionally. *Prereq: Cons. of*

instr.; completion of B.A. or B.S. in management, social sciences, or engineering.

PSYC 211. Advanced Social Psychology 3 sem. hrs.

Analysis of social psychological theory and research, including self processes, attitudes, persuasion, social influence, prejudice, group behavior, interpersonal relationships, aggression, and helping behavior. Offered annually. *Prereq: Cons. of instr. or admission to clinical program.*

PSYC 223. Foundations and Processes of Human Cognition 3 sem. hrs.

Examines the history, current theories and methods of cognitive psychology and cognitive neuroscience with emphasis on perception, attention, memory, language, and executive functions. Discusses the relevance of gender, age, and culture to cognitive process, as well as clinical applications. Offered annually. *Prereq: Cons. of instr. or admission to clinical program.*

PSYC 224. Advanced Statistics and Design 1 3 sem. hrs.

Covers inferential statistics commonly used in psychological research. Topics include: probability and hypothesis testing; t-tests; one-way, two-way, and repeated measures analysis of variance; post-hoc and planned comparisons; correlation; bivariate regression; nonparametric statistics; power and effect size. Emphasizes identifying the appropriate statistical model for a research question, understanding the assumptions underlying the tests, and being able to compute and interpret the test statistics accurately. Use of statistical packages. Offered fall term. *Prereq: PSYC 60 or equiv., and admission to clinical program or cons. of dept. ch.*

PSYC 225. Advanced Statistics and Design 2 3 sem. hrs.

Statistics covered include: multiple regression, logistic regression, multivariate analysis of variance and covariance, principal components analysis, and exploratory factor analysis. Covers psychometric concepts and procedures related to item selection, scale construction, reliability and validity. Emphasizes identifying the appropriate statistical model for a research question, understanding the assumptions underlying the tests, and being able to compute and interpret the test statistics accurately. Continued use of statistical packages. Offered spring term. *Prereq: PSYC 224 and admission to clinical program or cons. of dept. ch.*

PSYC 226. Advanced Statistics and Design 3 3 sem. hrs.

Experimental and quasi-experimental designs in psychological research. Single-case designs and time-series analysis in clinical research. Trend analysis and analysis of covariance. Meta-analysis and research synthesis in psychology. Selection of research problems, choice of appropriate experimental designs, and execution of research projects. Continued use of statistical packages. Offered annually. *Prereq: PSYC 224 or equiv. and cons. of instr. or admission to clinical program.*

PSYC 232. Advanced Personality Psychology 3 sem. hrs.

Covers major theoretical models and empirical approaches to the study of the person. Emphasis is placed on the current science of personology, the study of the whole person in context and over time. Offered occasionally. *Prereq: Cons. of instr. or admission to clinical program.*

PSYC 235. Physiological Psychology 3 sem. hrs.

The nervous system as the mediator of behavior. Physiological and neural factors in sensation, motor response, instinct, emotion, learning, and thinking. Offered occasionally. *Prereq: Cons. of instr. or admission to clinical program.*

PSYC 237. Abnormal Psychology 3 sem. hrs. Scientific overview of psychopathology. Diagnostic criteria, etiology, and current treatments of important psychological disorders, including anxiety disorders, mood disorders, personality disorders, schizophrenia. Offered annually. *Prereq: Cons. of instr. or admission to clinical program.*

PSYC 238. Principles of Child Psychopathology and Intervention 3 sem. hrs.

Introduces students to research on the development of psychopathology in childhood, including attention to biological, family, and sociocultural influences on maladjustment. It also will describe approaches for intervening clinically with childhood problems such as Attention Deficit Hyperactivity Disorder, conduct disorder, depression, and anxiety. Offered occasionally. *Prereq: Cons. of dept.*

PSYC 240. Psychological Assessment 1 3 sem. hrs.

Development of skills in the administration, scoring, interpretation, and integration of individual intelligence and achievement tests. Development of basic clinical assessment skills and understanding of the nature, development, etiology, and implications of individual differences in intelligence. Offered annually. *Prereq: Admission to clinical program.*

PSYC 241. Psychological Assessment 2 3 sem. hrs.

Extension of the assessment skills developed in PSYC 240; the administration and interpretation of projective technique with emphasis on the Rorschach and TAT; special emphasis on the MMPI and report writing. Offered annually. *Prereq: PSYC 240 and admission to clinical program.*

PSYC 250. Introduction to Therapeutic Practice 3 sem. hrs.

Course will emphasize basic listening skills, interviewing to establish treatment goals, and use of briefer approaches to psychotherapy. Supervised practice in skills common to most therapies will use simulated sessions, demonstration tapes, practice with peers, and work with clients pending demonstration of mastery of skills and instructor's approval. *Prereq: Cons. of dept.*

PSYC 251. Theories and Techniques of Psychotherapy 3 sem. hrs.

The current theories and techniques of psychotherapy; a critical review of relevant research. Offered annually. *Prereq: Cons. of dept.*

PSYC 252. Practicum in Individual Psychotherapy 3 sem. hrs.

Closely supervised practice in individual psychotherapy and case management with clients/patients. Offered annually. *Prereq: PSYC 250, PSYC 251, and cons. of dept.*

PSYC 257. Family Therapy 3 sem. hrs. Focuses on the evaluation and treatment of problems in couple and family functioning. It will introduce students to family systems theory and evaluate different models for assessing and intervening with couples and families. Offered occasionally. *Prereq: Cons. of dept.*

PSYC 295. Independent Study 1-3 sem. hrs. Offered every term. *Prereq: Cons. of director of clinical training.*

PSYC 297. Departmental Colloquium 0 sem. hrs.

Research and scholarly reports on selected topics in scientific and professional psychology by visiting investigators, departmental faculty and graduate students. Offered every term. S/U grade assessment. Attendance required of all full-time regular students.

PSYC 298. Selected Topics in General Psychology 3 sem. hrs.

Contemporary theoretical and research trends, particularly in areas of experimental, social, developmental, abnormal, quantitative or physiological psychology. Offered occasionally. *Prereq: Cons. of director of clinical training.*

PSYC 299. Master's Thesis 3-6 sem. hrs. Offered every term. *Prereq: Cons. of director of clinical training.*

PSYC 301. Ethics and Professional Issues in Clinical Psychology 3 sem. hrs.

A study of professional ethics drawing on APA guidelines, state statutes, research and case studies. Consideration of practice issues relevant to clinical psychology. Active participation in seminar presentations and formulation and resolution of ethical dilemmas. Offered occasionally. *Prereq: Cons. of instr. or admission to clinical program.*

PSYC 302. Multicultural Issues in Clinical Psychology 3 sem. hrs.

Designed to provide training in the culturally informed practice of clinical psychology. Students will learn to recognize and understand dimensions of cultural diversity in our communities, including (but not limited to) race, ethnic background and identity, sexual orientation, and religion. The course will also train students in developing culturally competent psychological interventions with individuals from diverse groups. Offered occasionally. *Prereq: Cons. of instr. or admission to clinical program.*

PSYC 338. Psychopharmacology 3 sem. hrs. Study of the major classes of drugs, their physiological mechanisms of action, and their efficacy in the treatment of mental disorders. Offered occasionally. *Prereq: PSYC 235 or*

equiv., PSYC 237, and cons. of instr. or admission to clinical program.

PSYC 339. Introduction to Neuropsychological Assessment 3 sem. hrs.

Prereq: PSYC 223, PSYC 235 or equiv., PSYC 240 and PSYC 241 or equiv., and cons. of instr. or admission to clinical program.

PSYC 353. Advanced Practicum in Clinical Psychology 3 sem. hrs.

Supervised experience in psychological assessment, interventions, and consultation. A maximum of 6 credit hours can be applied to the 78 credit hours required for the degree. Offered every term. *Prereq: Admission to clinical program.*

PSYC 354. Consultation and Supervision Strategies 1-3 sem. hrs.

Students attend weekly seminar on supervision and consultation strategies and models. Students conduct supervision of other clinical students under supervision on instructor or other clinical faculty. Offered annually; students attend both terms. *Prereq: Cons. of dir. of clinical training.*

PSYC 356. Teaching of Psychology 0 sem. hrs.

This seminar covers some of the theories and strategies of effective teaching, including creating syllabi, course management, lecture styles, student management issues, creating tests, and grading and assessment strategies. Available to third and fourth year students. Meets all year, once or twice per month. Practice lectures with feedback will be incorporated. Students who plan to teach for the department or who plan on teaching as part of their careers should strongly consider taking this course. Offered annually; students must attend both terms. *Prereq: Cons. of instr. and admission to clinical program.*

PSYC 394. Internship in Clinical Psychology 0 sem. hrs.

All students in the doctoral program in clinical psychology are required to complete a full-year (2000 hours) internship program that meets the requirements for internship training as stipulated by the American Psychological Association. S/U grade assessment. Registration for this full-time non-credit course in each of three terms during the internship year is obligatory. *Prereq: Cons. of dir. of clinical training.*

PSYC 398. Topics in Clinical Psychology Seminar 3 sem. hrs.

Seminar format in which special topics related to the assessment, etiology, or treatment of psychological problems are examined. A maximum of 3 credit hours can be applied to the 78 credit hours required for the degree. Offered annually. *Prereq: Cons. of dir. of clinical training.*

PSYC 399. Doctoral Dissertation 1-12 sem. hrs.

Students must take 12 credit hours for the degree. Offered every term. *Prereq: Cons. of dir. of clinical training.*

PSYC 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs. Fee. S/U grade assessment.

Prereq: Cons. of dir. of clinical training.

PSYC 892. Continuous Enrollment —

Half-Time 0 sem. hrs.

Fee. S/U grade assessment.

Prereq: Cons. of dir. of clinical training.

PSYC 893. Continuous Enrollment —

Full-Time 0 sem. hrs.

Fee. S/U grade assessment.

Prereq: Cons. of dir. of clinical training.

PUBLIC SERVICE (PUBS)

Coordinator and Assistant Professor: Caulfield
Harry G. John Professor of Urban Studies: Jablonsky

Associate Professor: Krejci, Soeka

Adjunct Assistant Professor: Johnstone

Adjunct Instructor: Kendrigan

Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREE OFFERED

Master of Arts in Public Service, Leadership Studies specialization, Plans A or B; all other specializations, Plan B only

SPECIALIZATIONS

Administration of Justice, Dispute Resolution, Health Care Administration, Leadership Studies, Non-profit Sector

PROGRAM DESCRIPTION

Public Service is an interdisciplinary program administered by Marquette University's College of Professional Studies. Within the program, students may pursue focused study in one of the five specializations described below.

ADMINISTRATION OF JUSTICE

The administration of justice specialization seeks to produce broadly-educated, highly-motivated, thoroughly-trained professionals and scholars to meet the challenges of urban society. Several objectives underlie the scope and content of the program: 1) to provide urban stewards with an ethical and scholarly understanding of the issues and ramifications of current and anticipated policies in criminal justice; 2) to develop persons capable of exercising independent, analytical thought consistent with the needs of a democratic society; 3) to provide a core of leaders familiar with the issues of criminal justice management and policy analysis.

DISPUTE RESOLUTION

The dispute resolution specialization attempts to combine the fields of law, business, psychology, sociology, political science, health sciences, education, and communication in dealing with today's multi-faceted issues in resolving disputes. The program seeks to train professionals, primarily those in the fields of law, health care, education, and business, to practice as third party neutrals in the field of dispute resolution, or to be knowledgeable participants in dispute resolution processes.

Marquette University also offers a certificate program in dispute resolution. (See the program section on Dispute Resolution for description and details.)

HEALTH CARE ADMINISTRATION

The health care administration specialization seeks to prepare working professionals to meet the leadership challenges of today's health care system. As managed care and the integration of health care delivery continue to evolve, new skills and knowledge are needed to keep pace with current health care demands. The program provides a foundation in finance, economics, policy, leadership, systems, and outcome planning and evaluation, specifically related to the changing health care system. Through the many elective offerings (informatics, case management, marketing, program development, administrative practicum, conflict resolution, long-term care and more), students may explore a wide range of special interests.

LEADERSHIP STUDIES

The leadership studies specialization prepares students to meet the challenges of leadership on multiple levels, including self-leadership, leadership in the context of interpersonal relationships, leadership where diversity is the norm, and leadership in organizations. This specialization prepares students to be ethical leaders who are skilled at: leading themselves, leading and managing relationships, leading in organizations, leading and managing change, and leading within a variety of contexts.

NON-PROFIT SECTOR

The non-profit sector specialization seeks to provide training for individuals who plan a career in the third sector. Administrative and leadership preparation are particularly central to this training as executives handle budgets, board memberships, personnel oversight, corporate statutes, and program development.

Note: The non-profit sector specialization is limited to no more than three non-Trinity Fellows per year.

PREREQUISITES FOR ADMISSION

Applicants to the public service specializations must hold a baccalaureate degree, or its academic equivalent, from a college or university of recognized standing. The undergraduate background must be appropriate to the chosen course of study. Generally, applicants should have a minimum cumulative grade point average of 3.00 (on a scale of 4.00) in their undergraduate course work. Previous professional experience will be a serious consideration in the admission decision.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation from academic or professional sources.
4. *(For administration of justice, health care administration, and non-profit sector)* official test scores from the GRE, LSAT, or Miller Analogies Test (recommended, but not required, particularly for students whose undergraduate performance does not clearly indicate potential for success at the graduate level).

5. *(For dispute resolution)* official test scores from the GRE, GMAT, LSAT, or Miller Analogies Test.
6. *(For leadership studies)* official test scores from the GRE, LSAT or GMAT are required only for students whose cumulative undergraduate G.P.A. is less than 3.20 on a 4.00 scale.
7. *(For administration of justice, health care administration, leadership studies, and non-profit sector)* a personal statement of interests and goals.
8. *(For international applicants only)* a TOEFL score or other acceptable proof of English proficiency.

MASTER'S REQUIREMENTS

ADMINISTRATION OF JUSTICE

Students must complete a total of 36 credit hours of course work in Plan B: 18 credit hours (6 courses) of core course work (PUBS 200, 210, 230, 240, 260, 270 or 271, PUBS 281, and/or PUBS 298) and 18 credit hours (6 courses) in the area of specialization (ADJU 200 and 205), including four electives (12 credits) which may be chosen from the following: ADJU 210, 211, 220, 230, 240, 250, 260, 290, 295, 298.

DISPUTE RESOLUTION

Students must complete a total of 36 credit hours of course work in Plan B: 21 credit hours (seven courses) of core course work (PUBS 200, 210, 230, 240, 260, 270, 290) and 15 credit hours (5 courses) in the area of specialization (DIRS 200, 201, 203, 207, 210).

HEALTH CARE ADMINISTRATION

Students must complete a total of 36 credit hours of course work in Plan B: 15 credit hours (five courses) of core course work (PUBS 200, PUBS 210, PUBS 230 or NURS 207, PUBS 240 and PUBS 260), 21 credit hours (seven courses) in the area of specialization (HEAL 220, 241, 248, and NURS 209), including three electives (nine credits) which may be chosen from the following: BUAD 202, 260; DIRS 203; HEAL 245, 246; HURE 220, 221; NURS 261, 267, 268; GERT 200, 201; PUBS 258, 290, 295, or other courses approved by adviser.

LEADERSHIP STUDIES

Students must complete a total of 36 credit hours of course work in either Plan A or Plan B. For Plan A, a student must complete 15 credit hours (five courses) of core course work (PUBS 200, 210, 230, 240, 270), 12 credit hours (four courses) in the area of specialization (LEDR 210, 220, 230, 240), 3 elective credits, and 6 thesis credits. For Plan B, a student must complete 15 credit hours (five courses) of core course work (PUBS 200, 210, 230, 240, 270), 12 credit hours (four courses) in the area of specialization (LEDR 210, 220, 230, 240), 6 elective credits, and a 3 credit capstone integrative project (LEDR 297). The

electives taken for either plan may be leadership courses and/or public service courses.

NON-PROFIT SECTOR

Students must complete a total of 36 credit hours of course work in Plan B: 18 credit hours (six courses) of core course work (PUBS 200, 210, 230, 240, 260, 270) and 18 credit hours (six courses) in the area of specialization (PUBS 220, 222, 226, 228), including two electives (six credits) chosen from a list that includes BUAD 260, 262; ADJU 230, 250, 298; HEAL 220, 222, 241, 248; GERT 200, 201; PUBS 291.

COURSE DESCRIPTIONS

GRADUATE COURSES:

Administration of Justice (ADJU)

ADJU 200. Criminological Theory in Public Service/Social Policy 3 sem. hrs.

The study of criminological theories which inform the construction and operation of criminal justice administration and policy. Offered annually.

ADJU 205. Research, Program Planning and Evaluation 3 sem. hrs.

An analysis of the application of research methods to issues of planning, implementation, and evaluation of programming in the criminal justice system. Offered annually.

ADJU 210. Policies in Policing 3 sem. hrs. Examines contemporary policy making processes adopted by federal, state, and local police agencies. In depth analysis of the most critical policies police administrators must consider. Policies include: recruitment, selection and promotion of personnel, use of force, emergency vehicle operation, accreditation, discretion and training.

ADJU 211. Legal Issues in Law Enforcement 3 sem. hrs.

Focuses on risk management principles and legal responsibilities of law enforcement administrators with the intent of minimizing civil liabilities. Examines constitutional issues, Supreme Court case decisions, Fair Labor Standards Act, Family Leave and Medical Act, workplace harassment issues, management rights, contracts, internal investigations and the disciplinary process. *Prereq: Acceptance to the graduate certificate for law enforcement leadership and management.*

ADJU 220. Courts and the Legal System 3 sem. hrs.

An in-depth analysis of the criminal adjudication process to include an examination of the criminal justice system (police, courts, and corrections) with particular concern for complex organizations and organizational systems. Offered occasionally.

ADJU 230. Victims and Victims Policy 3 sem. hrs.

An overview of issues facing victims in modern society and society's efforts to make the victim whole. Offered occasionally.

ADJU 240. Correctional Management and Policy Analysis 3 sem. hrs.

Critical study of selected areas of correctional management such as organization theory, management philosophy and leadership, human resource management, labor relations, and current issues in the administration of institutional and community corrections. Offered occasionally.

ADJU 250. Clinical Issues in Criminal Justice 3 sem. hrs.

An investigation of the clinical issues impacting criminal justice policy, including mental illness and criminal behavior, legal insanity, post-traumatic stress disorder and crime, civic and criminal commitment, prisoner's rights, and the treatment of juveniles and adult offenders. Offered occasionally.

ADJU 260. Issues in Criminal Justice Policy-Making 3 sem. hrs.

An analysis of key issues affecting the complex processes of criminal justice at every stage of the criminal justice system. Offered occasionally.

ADJU 290. Internship in Criminal Justice 3-6 sem. hrs.

Supervised experiences in criminal justice. Each intern must negotiate an appropriate internship plan and location with the graduate criminal justice faculty and the criminal justice internship coordinator. Offered every term. S/U grade assessment. *Prereq: Cons. of dept. ch. and cons. of ADJU dir.*

ADJU 295. Independent Study 1-3 sem. hrs. Offered every term. *Prereq: Cons. of dept. ch. and cons. of ADJU dir.*

ADJU 298. Selected Topics in Administration of Justice 3 sem. hrs.

Examination of public service and social policy issues in such areas as juvenile delinquency and juvenile justice, law enforcement leadership and supervision, criminal justice decision-making, perspectives on crime and punishment. May be taken a maximum of two times if topics differ. Offered occasionally.

Dispute Resolution (DIRS)

DIRS 200. Dispute Resolution Theory 3 sem. hrs.

The development of conflict between and among individuals, organizations, and governmental units; various models for conflict and types of conflict resolution will also be surveyed. *Prereq: DIRS 203.*

DIRS 201. Advanced Issues in Dispute Resolution 3 sem. hrs.

Explores current theoretical and applied issues in mediation. These issues may include: communication justice and models, legislative

enactments, dispute resolution systems design, and court-connected dispute resolution systems. Case studies provide an opportunity to examine the theory through an applied approach. *Prereq: DIRS 203.*

DIRS 203. Mediation 3 sem. hrs.

Mediation as facilitated negotiation, three-party processes vs. two-party processes, interest-based bargaining vs. positional or adversarial bargaining. Concepts will be explored through the use of class role plays, which will be videotaped and critiqued as a part of mediation training.

DIRS 207. Advanced Mediation 3 sem. hrs.

An exploration of more advanced issues in the practice of mediation, including brokering, emotions in mediation, agenda, joint session, caucuses, agreements and multi-party/multi issue cases. *Prereq: DIRS 203.*

DIRS 210. Practicum in Dispute Resolution 1-3 sem. hrs.

Required of all students; for example, an internship may be established with a community mediation center, a court system, a hospital peer review committee, or a public school teachers' collective bargaining unit. Placements will be arranged on an individual basis. S/U grade assessment. *Prereq: DIRS 203 and DIRS 207.*

DIRS 295. Independent Study 3 sem. hrs.

Public Service (PUBS)

PUBS 200. Nature of Cities 3 sem. hrs.

An interdisciplinary examination of the individual, group, and institutional aspects of everyday life in urban America. Addresses both historical and contemporary contexts. Offered occasionally.

PUBS 210. Urban Policy and Public Service Administration 3 sem. hrs.

Examination of the role of governmental and nongovernmental agencies in the development and application of public policy. Special attention devoted to the interplay between the government and everyday society. Offered occasionally.

PUBS 220. Non-Profit Organizations: Trends in the Third Sector 3 sem. hrs.

Introduction to the development, challenges, and opportunities in the non-profit sector. Includes case studies of governance, business practices, social entrepreneurship, and grant writing.

PUBS 222. Financial Matters in the Non-Profit Sector 3 sem. hrs.

Examination of various financial issues affecting the non-profit sector including fund-raising from donors and foundations, grant proposals, budgeting, and personnel/program costs. *Prereq: PUBS 220.*

PUBS 226. Social Justice and Social Activism 3 sem. hrs.

Examines the meaning and implications of social justice; considers the history of social activism from both religious and non-sectarian traditions. *Prereq:* PUBS 220.

PUBS 228. Legal Aspects of the Non-Profit Sector 3 sem. hrs.

Examines a range of legal issues that confront non-profits including articles and by-laws, fiduciary obligations, governance and boards of directors, charitable solicitations, and for-profit ventures. *Prereq:* PUBS 220.

PUBS 230. Ethics in Public Service 3 sem. hrs.

Normative concepts and issues within a public service setting. Consideration of ethical principles and standards for urban professionals. Historical, philosophical, and theological roots and their relationship to contemporary applications. Offered occasionally.

PUBS 240. Legal Issues in Public Service 3 sem. hrs.

Survey of the common law, statutory law, and constitutional law affecting individuals and organizations in public service. Topics may include: basic tort and contract law, administrative law, employment law, open meetings law, free speech and association rights, collective bargaining, and disability issues. Offered occasionally.

PUBS 252. Systems and Leadership in Health Care 3 sem. hrs.

Examination of interdependencies among individuals, organizations, and systems within health care. Perspectives may include systems thinking, team building, change dynamics, strategic planning, decision-making models, and principle-based leadership. Offered occasionally.

PUBS 258. Practicum in Health Care Administration 3 sem. hrs.

Practicum in a selected administrative role and setting. Offered annually.

PUBS 260. Communication and the Management Process in Urban Service 3 sem. hrs.

Communication challenges in the public service sector whether in institutional or community settings. Explores the communication process, including perception, attribution, and verbal and nonverbal communication. Additional considerations will be given to cross-cultural decision-making, and conflict resolution in both interpersonal and group settings. Offered occasionally.

PUBS 270. Urban Public Sector Economics 3 sem. hrs.

Examination of municipal finance and budgetary concerns, economics of land development, and fiscal oversight in the public sector. Offered occasionally.

PUBS 271. Economics and Budgeting of Policing 3 sem. hrs.

Examination of finance and budgeting concerns, economics and fiscal oversight in a law

enforcement agency. Great emphasis on the role of a chief executive of a law enforcement agency as related to budget preparation, submission, operation and tracking. *Prereq:* *Acceptance to the graduate certificate for law enforcement leadership and management.*

PUBS 281. Police Leadership and Ethics 3 sem. hrs.

Analyzes contemporary theories of law enforcement leadership with an emphasis on the application of those leadership concepts through the use of case studies and by the analysis of current leadership situations in a law enforcement agency. Strongly focuses on ethics, as the ethical conduct of police leaders greatly determines the ethical conduct of the agency as a whole. *Prereq:* *Acceptance to the graduate certificate for law enforcement leadership and management.*

PUBS 290. Urban Research Methods 3 sem. hrs.

Strategies for conducting research in urban settings. Includes the conceptualization, execution, evaluation, and presentation of research projects. Offered occasionally.

PUBS 291. Practicum in the Non-Profit Sector 3 sem. hrs.

Placements made on individual basis with approval of director of the public service program. *Prereq:* PUBS 220.

PUBS 294. Practicum in Public Service 3 sem. hrs.

Offers the opportunity to gain experience in a community organizations. Must be directed by a faculty member.

PUBS 295. Independent Study 1-3 sem. hrs.

Offered every term. *Prereq:* *Cons. of dept. ch. and cons. of prog. dir.*

PUBS 298. Special Topics in Public Service 1-3 sem. hrs.

Examination of selected urban issues that go beyond the scope of regular course offerings. Offered occasionally.

PUBS 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq:* *Cons. of dept. ch.*

PUBS 892. Continuous Enrollment — Half-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq:* *Cons. of dept. ch.*

PUBS 893. Continuous Enrollment — Full-Time 0 sem. hrs.

Fee. S/U grade assessment. *Prereq:* *Cons. of dept. ch.*

RELIGIOUS STUDIES (REST)

See **THEOLOGY (THEO)**

SOCIAL AND CULTURAL SCIENCES (SOCS)

Chairperson and Professor: Holstein
Professor: Buckholdt, Miller, Moberg (*Emeritus*)
Associate Professor: Coles, Farkas, Jones, Metz (*Emeritus*), Peterson, Sullivan, Zevitz
Assistant Professor: Archbold, Doane, Owens, Schrift, Staral, Stichman, Stroschine
Adjunct Assistant Professor: Crane, Johnstone
Note: Faculty members and their ranks are for the 2005–2006 academic year.

The Department of Social and Cultural Sciences does not offer graduate degree programs. Faculty members do participate in some graduate degree programs offered under other administrative auspices. In addition, certain upper division undergraduate courses in the Department of Social and Cultural Sciences have been approved for graduate credit and may be taken, as appropriate, by graduate students in other graduate programs. To earn graduate credit for an upper division course, students must have the approval of their major departments and must complete extra work in the course beyond that required for undergraduate credit.

COURSE DESCRIPTIONS

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

Anthropology (ANTH)

ANTH 105. Archaeology and Prehistoric Cultures 3 sem. hrs.

ANTH 109. Language and Culture 3 sem. hrs.

ANTH 110. Human Geography 3 sem. hrs.

ANTH 111. Economic Anthropology 3 sem. hrs.

ANTH 112. Anthropology of Religion 3 sem. hrs.

ANTH 116. Culture Change and Development 3 sem. hrs.

ANTH 121. Native Peoples of North America 3 sem. hrs.

ANTH 125. People and Cultures of the Middle East 3 sem. hrs.

ANTH 126. European Cultures and Peoples 3 sem. hrs.

ANTH 129. Urban Anthropology 3 sem. hrs.

ANTH 130. Women and Men in Cross-Cultural Perspective 3 sem. hrs.

ANTH 141. Prehistory of North America
3 sem. hrs.

ANTH 142. Prehistory of South America
3 sem. hrs.

ANTH 145. Archaeology of Complex Societies 3 sem. hrs.

ANTH 148. Archaeological Fieldwork
3 sem. hrs.

ANTH 151. Human Osteology and Odontology 3 sem. hrs.

ANTH 191. Development of Anthropological Theory 3 sem. hrs.

ANTH 196. Seminar in Anthropology
3 sem. hrs.

ANTH 198. Special Topics in Anthropology
3 sem. hrs.

Criminology and Law Studies (CRLS)

CRLS 104. Methods of Criminological Research 3 sem. hrs.

CRLS 133. Constitutional Law
3 sem. hrs.

CRLS 151. History and Philosophy of Crime and Punishment 3 sem. hrs.

CRLS 152. Juvenile Delinquency/Juvenile Justice 3 sem. hrs.

CRLS 155. Criminological Theory
3 sem. hrs.

CRLS 156. Corrections: Prisons, Probation, and Parole 3 sem. hrs.

CRLS 157. Police and Society
3 sem. hrs.

CRLS 158. Victimology
3 sem. hrs.

CRLS 159. Police Organization and Administration 3 sem. hrs.

CRLS 160. Ultimate Penalties in the Criminal Justice System 3 sem. hrs.

CRLS 161. Victim Services and Policies
3 sem. hrs.

CRLS 162. White Collar Crime
3 sem. hrs.

CRLS 163. Criminal Violence in America
3 sem. hrs.

CRLS 164. Organized Crime
3 sem. hrs.

CRLS 165. Comparative Justice Systems
3 sem. hrs.

CRLS 166. Clinical Criminology
3 sem. hrs.

CRLS 167. Women, Crime, and Criminal Justice 3 sem. hrs.

CRLS 181. Ethics in Criminal Justice
3 sem. hrs.

CRLS 182. Criminal Court Process
3 sem. hrs.

CRLS 185. Financial Crime Investigation
3 sem. hrs.

CRLS 188. Criminal Investigation
3 sem. hrs.

CRLS 189. Evidence
3 sem. hrs.

CRLS 198. Special Topics in Criminology and Law 3 sem. hrs.

Sociology (SOCI)

SOCI 122. Sociology of the Life Course
3 sem. hrs.

SOCI 123. Self, Language and Social Interaction 3 sem. hrs.

SOCI 124. Behavior Patterns of Youth
3 sem. hrs.

SOCI 125. Sociology of Aging
3 sem. hrs.

SOCI 127. Sociology of Community
3 sem. hrs.

SOCI 128. Sociology of Human Values
3 sem. hrs.

SOCI 131. Urban Sociology
3 sem. hrs.

SOCI 133. Culture, Health and Illness
3 sem. hrs.

SOCI 134. Sociology of Religion
3 sem. hrs.

SOCI 135. Sociology of Work and Occupations 3 sem. hrs.

SOCI 136. Sociology of Education
3 sem. hrs.

SOCI 137. Complex Organizations
3 sem. hrs.

SOCI 151. Sociology of Mental Illness
3 sem. hrs.

SOCI 152. Juvenile Delinquency/Juvenile Justice 3 sem. hrs.

SOCI 154. Law and Society
3 sem. hrs.

SOCI 162. Sociology of Sex and Gender
3 sem. hrs.

SOCI 163. Race and Ethnic Relations
3 sem. hrs.

SOCI 165. Social Inequality
3 sem. hrs.

SOCI 167. Women, Crime, and Criminal Justice 3 sem. hrs.

SOCI 168. Political Sociology
3 sem. hrs.

SOCI 182. Comparative Sociology
3 sem. hrs.

SOCI 183. Population
3 sem. hrs.

SOCI 186. Social Change
3 sem. hrs.

SOCI 188. Topics in Sociological Theory
3 sem. hrs.

SOCI 189. Sociological Practice
3 sem. hrs.

SOCI 196. Seminar in Sociology
3 sem. hrs.

SOCI 198. Topics in Sociology
3 sem. hrs.

Social Welfare and Justice (SOWJ)

SOWJ 170. Family Counseling and Therapy
3 sem. hrs.

SOWJ 178. Faith, Justice & Social Change
3 sem. hrs.

SPEECH-LANGUAGE PATHOLOGY (SPLA)

Interim Chair: Halula

Director of M.S. Program and Associate

Professor: Long

Professor: W. Trotter (*Emerita*)

Associate Professor: Bhatnagar, Korabic,

Linville, Moller (*Emerita*)

Assistant Professor: Moyle

Clinical Coordinator: Wood

Clinical Instructor: Berman, Erdman, Hallen,

Krueger, Puglisi-Creegan

Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREES OFFERED

Master of Science, students are admitted under Plan B (non-thesis option) but may request Plan A (thesis option); Certificate

SPECIALIZATIONS

Master's: None

Certificate: Bilingual English-Spanish

PROGRAM DESCRIPTION

The speech-language pathology program, leading to the master of science degree, is offered through the Department of Speech Pathology and Audiology and is accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association (CAA-ASHA). The program is directed at preparing students for the Certificate of Clinical Competence in Speech-Language Pathology (CCC-SLP). For students interested in licensure as a public school speech-language clinician, the program meets the requirements of the Department of Public Instruction of the State of Wisconsin (DPI-WI) for licensure as a speech-language pathologist.

The graduate curriculum in speech-language pathology offers advanced course work in the prevention, identification, evaluation, and treatment of speech, language, and hearing disorders in both children and adults, meeting both the academic and clinical requirements of the American Speech-Language-Hearing Association and the licensure requirements of the State of Wisconsin.

The master of science program in speech-language pathology typically takes two years (four terms and one summer session) to complete; however, the time required to complete degree and certification/licensure requirements may be shorter or longer depending on the student's academic/clinical background, needs, and special interests.

BILINGUAL ENGLISH-SPANISH CERTIFICATE (BIES)

A bilingual English-Spanish certificate (BIES) is offered through the master's degree program or as continuing education for practicing speech-language pathologists. This certificate program prepares speech-language pathologists who are proficient in Spanish to evaluate and treat communication disorders in individuals who are Spanish-dominant speakers. Candidates for the BIES must be accepted to the master of science program in speech-language pathology or possess a master's degree and ASHA certification as a speech-language pathologist if pursuing the BIES as continuing education. Candidates also must complete an application to the BIES program and meet language proficiency requirements established by the Department of Foreign Languages and Literatures.

The BIES program requires completion of four (4) academic courses: SPAN 142 Spanish Phonetics and Applied Linguistics and SPPA 148 Multicultural Issues for Speech-Language Pathologists taken at the undergraduate or graduate level AND SPPA 281 Speech and Language Assessment in Bilingual Populations and SPPA 282 Speech and Language Intervention in Bilingual Populations taken at the graduate level. In addition, a minimum of 100 clinical practicum hours with Spanish-dominant speakers must be obtained under the supervision of a bilingual speech-language pathologist through SPPA 252, 253, and 254. Graduate-level academic course work for the BIES may fulfill elective requirements for the master of science degree in speech-language pathology. Clinical practicum hours through the BIES program will apply toward a master of science degree, ASHA certification and DPI licensure requirements. All course work is based on guidelines suggested by the American Speech-Language Hearing Association for speech-language pathologists providing bilingual assessment and intervention.

PREREQUISITES FOR ADMISSION

Applicants should have graduated with, or be about to graduate with, a bachelor's degree from an accredited institution with a major in communicative disorders, or its equivalent, and an undergraduate grade point average of B or above. Students who do not meet these standard requirements must be prepared to complete undergraduate background courses as advised by the program director.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.

3. Three letters of recommendation from individuals familiar with the applicant's academic and clinical work.
4. GRE scores (General Test only).
5. (*For international applicants only*) a TOEFL score or other acceptable proof of English proficiency.
6. (*For BIES applicants only*) a statement of purpose which must address Spanish proficiency, Spanish course work completed, any study abroad, and reasons for pursuing the BIES along with how it will influence the applicants' future.

STUDENTS WITH COMMUNICATIVE DISORDERS

The Department of Speech Pathology and Audiology at Marquette University is dedicated to graduating students with optimum preparation for successful careers in the profession of communication disorders. Since voice, fluency, articulation, language or hearing impairments may interfere with a clinician's ability to effectively treat persons with communication impairments, we encourage students in our program with such impairments to seek treatment.

ENGLISH PROFICIENCY

Our department supports the position of the American Speech-Language-Hearing Association in encouraging persons of diverse backgrounds to enter the field of communication disorders. All students in the Department of Speech Pathology and Audiology must provide evidence of adequate written and verbal communication skills in Standard American English necessary to meet academic and clinical requirements. Non-native speakers of English will work closely with their advisers throughout the course of their study toward establishing this proficiency prior to enrollment in clinical practicums. Students who speak with accents and/or dialects may seek assistance in improving these skills at the recommendation of department instructional staff.

BACHELOR'S-MASTER'S PROGRAM

The Department of Speech Pathology and Audiology offers early admission into its master of science degree program in speech-language pathology to Marquette University students majoring in speech pathology and audiology. Students can apply for admission to this program in the second semester of their undergraduate junior year. Students accepted into the undergraduate 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 their undergraduate degree requirements, their graduate admission as a regular degree status student is activated. Students interested in this program can obtain further information and an application from the Speech Pathology and Audiology Department office.

MASTER'S REQUIREMENTS

Students are admitted to the program in Plan B, but may transfer to Plan A with

approval from the Graduate School and the SPLA program.

For both Plan A and Plan B, one half of the completed course work must be in 200-level courses acceptable for graduate credit only.

THESIS PROGRAM (PLAN A)

A student must complete a minimum of 40 credit hours of course work, plus six credit hours of thesis work, pass a written comprehensive examination, and submit an approved thesis.

NON-THESIS PROGRAM (PLAN B)

A student must complete a minimum of 46 credit hours of course work and pass a written comprehensive examination.

REQUIRED COURSE WORK

A student seeking the master of science degree in speech-language pathology must complete the following courses, or their equivalents, at either the graduate or undergraduate level:

- | | |
|----------|--|
| SPPA 143 | Stuttering and Other Fluency Disorders |
| SPPA 152 | Procedures in Medical and School Settings |
| SPPA 158 | Diagnostic Methods in Speech-Language Pathology |
| SPPA 256 | Clinical Grand Rounds in Speech-Language Pathology |
- In addition, the following courses are required at the graduate level:
- | | |
|----------|---|
| SPPA 241 | Child Language Intervention Issues |
| SPPA 244 | Voice Disorders 1 |
| SPPA 247 | Neurological Bases of Speech and Language Disorders |
| SPPA 248 | Neuromuscular Disorders |
| SPPA 249 | Aphasia |
| SPPA 252 | Student Teaching—Speech Pathology |
| SPPA 253 | Practicum in Speech Pathology in the Campus Clinic |
| SPPA 254 | Practicum in Speech Pathology at Affiliated Centers |
| SPPA 259 | Practicum in Diagnostic Methods in Speech Pathology |
| SPPA 261 | Clinical Research Methodology |

One course (3 credits) must be completed from the following group (the first two courses may be taken at either the undergraduate or graduate level):

- | | |
|----------|----------------------------------|
| SPPA 173 | Hearing Problems |
| SPPA 174 | Aural Rehabilitation |
| SPPA 275 | Aural Habilitation with Children |

COMPREHENSIVE EXAMINATION

The Praxis Series Specialty Area Test in Speech-Language Pathology, administered by the Educational Testing Service (ETS), is the master's comprehensive examination used for students in the speech-language pathology program. The student must take the Praxis examination no earlier than 6 months prior to graduation and receive a passing score (600 out of 800). Results of the examination must be received in the Department of Speech Pathology and Audiology by the time that final grades are due in the student's final semester of study.

COURSE DESCRIPTIONS

UPPER DIVISION COURSES THAT
MAY CARRY GRADUATE CREDIT:

Speech Pathology and Audiology (SPPA)

SPPA 143. Stuttering and Other Fluency Disorders 3 sem. hrs.

SPPA 148. Multicultural Issues for Speech-Language Pathologists 3 sem. hrs.

SPPA 152. Procedures in Medical and School Settings 3 sem. hrs.

SPPA 158. Diagnostic Methods in Speech-Language Pathology 3 sem. hrs.

SPPA 173. Hearing Problems 3 sem. hrs.

SPPA 174. Aural Rehabilitation 3 sem. hrs.

GRADUATE COURSES:

Speech Pathology and Audiology (SPPA)

SPPA 241. Child Language Intervention Issues 3 sem. hrs.

Includes basic information pertaining to current theories of language impairment in children. A detailed examination of the linguistic characteristics typical of children with primary and secondary language impairments is provided along with issues concerning the differential diagnosis of children with language disorders. Information pertaining to both theoretical and applied aspects of language intervention from infancy through adolescence is provided. Issues pertinent to assessment and intervention with multicultural populations are embedded in the lecture material throughout the semester. Offered fall term.

SPPA 242. Traumatic Brain Injuries 3 sem. hrs.

Surveys communicative/cognitive disorders subsequent to head trauma. Topics include: neurophysiology of brain functions, linguistic and cognitive deficits, assessment and management of patients with closed-head injuries. Offered summer term. *Prereq: SPPA 247 and SPPA 249.*

SPPA 243. Dysphagia 3 sem. hrs.
Anatomy and physiology of the normal swallow in adults; anatomic and physiologic disorders affecting the process of swallowing (deglutition) with emphasis on radiographic and bedside diagnostic and treatment procedures. The class will include a lab experience and analysis of videofluoroscopic studies of the swallowing process. Offered summer session.

SPPA 244. Voice Disorders 1 3 sem. hrs.
An in-depth examination of normal and pathological voice. Topics considered include: forces producing phonation, measures of glottal function, and the effect of pitch, intensity and other

variables on vocal function. Emphasis on the diagnosis and treatment of voice disorders using clinical instrumentation. Offered fall term.

SPPA 245. Aging Voice and Speech: Implications for Medical Speech Pathology 3 sem. hrs.

An examination of rehabilitative techniques for laryngectomized individuals including esophageal voice production, artificial laryngeal devices, surgical-prosthetic speech rehabilitation techniques, psychosocial intervention, surgical procedures for subtotal and total laryngectomy, and research in alaryngeal communication. Clinical practicum experience with laryngectomy clients is included. In addition, special topics related to laryngeal voice disorders are addressed via in-depth discussion of current research. Offered spring term.

SPPA 246. Craniofacial Speech Disorders 3 sem. hrs.

Intended to provide a background in craniofacial speech disorders. Will begin with a review of embryological development of the head/face, craniofacial syndromes and their etiologies, and the anatomy and physiology of the velopharyngeal mechanism. The importance of "team care" and the role of the various disciplines on the craniofacial team will be discussed. Both instrumental and non-instrumental assessment techniques will be presented. Intervention will focus primarily on adapting traditional and phonological approaches to the treatment of craniofacial speech disorders. Offered spring term. *Prereq: SPPA 142 or equiv.*

SPPA 247. Neurological Bases of Speech and Language Disorders 3 sem. hrs.

Focuses on fundamentals of neuroscience as it relates to human behavior. Areas discussed include: clinical neurology, neuroanatomy and physiology, neuroembryology, neuroradiology, neurosurgical principles, sensorimotor systems and their applications in the assessment and management of neurogenic communicative disorders. Offered fall term.

SPPA 248. Neuromuscular Disorders 3 sem. hrs.

A survey of the etiology, symptomatology and clinical management of major neuromuscular and organic articulation disorders. Topics discussed include dysarthria and apraxia. Offered spring term. *Prereq: SPPA 247.*

SPPA 249. Aphasia 3 sem. hrs.

A comprehensive review of neurogenic disorders of adult language. Topics discussed include: differential diagnosis of aphasia, linguistic analysis of different aphasic syndromes, clinical testing, and rehabilitation. Differential diagnosis of language disturbances associated with dementia and right/left hemispheric pathologies will also be discussed. Offered fall term. *Prereq: SPPA 247, which can be taken concurrently.*

SPPA 252. Student Teaching-Speech Pathology 3 sem. hrs.

Speech pathology practicum in a school setting. Offered every term. S/U grade assessment. *Prereq: SPPA 152 and SPPA 158. Fee. Use of private car possibly required for student teaching affiliations inaccessible to public transportation. Student is responsible for transportation costs.*

SPPA 253. Practicum in Speech Pathology in the Campus Clinic 1 sem. hr.

Supervised student-administered therapy in the campus clinic. Offered every term. S/U grade assessment. *Prereq: Regular degree status.*

SPPA 254. Practicum in Speech Pathology at Affiliated Centers 3 sem. hrs.

Supervised student-administered therapy in an off-campus facility. Offered every term. S/U grade assessment.

SPPA 256. Clinical Grand Rounds in Speech-Language Pathology 1 sem. hr.

Presentation of challenging cases in communication/swallowing disorders. *Prereq: Completion of at least 20 graduate credit hours in speech pathology and audiology.*

SPPA 259. Practicum in Diagnostic Methods in Speech Pathology 1-2 sem. hrs.

Participation in the campus Diagnostic Clinic in speech and language disorders. Additional credit (1 credit) available for students doing additional diagnostic work off-campus and on campus in the Speech and Hearing Clinic. S/U grade assessment. *Prereq: SPPA 158.*

SPPA 260. Augmentative Communication Strategies 3 sem. hrs.

Deals with certain problems met when attempting to habilitate or rehabilitate children and adults who have essentially normal hearing for whom speech is unlikely to be adequate for at least some communicative purposes (either temporarily or permanently). Intended to acquaint participants with the gestural and instrumental augmentative communication strategies that have been developed to provide them with the information necessary to both select the most advantageous strategy for a particular client and teach him or her how to use it. Offered summer session.

SPPA 261. Clinical Research Methodology 3 sem. hrs.

Methodologies involved in identifying, formulating, and answering questions relevant to the impacts of diagnostic and therapeutic programs on persons who have communicative disorders. Offered spring term.

SPPA 265. Intervention Issues with the Birth-to-Three Child 3 sem. hrs.

Screening, assessment and family-based intervention issues specific to the communicative aspects of the birth-to-three child. Emphasizes identification and treatment issues specific to P.L. development, multicultural considerations, case management, and interdisciplinary/transdisciplinary assessment and intervention. Offered every summer.

SPPA 269. Professional Affairs in Speech Pathology 3 sem. hrs.

Administrative organization, problems and practices in various settings in which speech and hearing clinicians function: school systems, community clinics, hospitals, universities, training centers, and in private practice. Offered fall term.

SPPA 275. Aural Habilitation with Children 3 sem. hrs.

An in-depth study of the assessment, psychosocial problems, and remediation/education of children with prelingual hearing impairments.

Offered summer session. *Prereq:* SPPA 173 or *cons. of instr.*

**SPPA 281. Speech and Language
Assessment in Bilingual Populations**
3 sem. hrs.

Study of the principles and techniques of assessing bilingual populations with an emphasis on the Spanish-English bilingual speaker. Instruction in formal and informal methods and strategies for assessing speech and language skills in children and adults. *Prereq:* SPPA 158 or *equiv.*

**SPPA 282. Speech and Language
Intervention in Bilingual Populations**
3 sem. hrs.

Study of intervention approaches and techniques in the remediation of communication disorders in bilingual populations, with an emphasis on the Spanish-English bilingual speaker. Speech and language intervention techniques which focus on facilitating language for learning, language for communication, and the remediation of speech and language impairments in adults and children will be included. Offered summer session.

**SPPA 284. Speech Sound Disorders in
Children** 3 sem. hrs.

Advanced study of issues relevant to the assessment and treatment of children with speech sound disorders. Topics include phonetic transcription of dialectal speech, measures of phonological development, analysis of speech error patterns, and methods for the remediation of speech delay and residual articulation errors. *Prereq:* SPPA 142 or *equiv.*

**SPPA 294. Special
Institute/Workshop/Project** 3 sem. hrs.
Offered occasionally.

SPPA 295. Independent Study 1-3 sem. hrs.
Offered every term. *Prereq:* *Cons. of dept. ch. and cons. of SPPA M.S. dir.*

SPPA 299. Master's Thesis 1-6 sem. hrs.
Offered every term. *Prereq:* *Cons. of dept. ch., cons. of SPPA M.S. dir., and approved thesis outline and establishment of a thesis committee.*

**SPPA 891. Continuous Enrollment — Less
than Half-Time** 0 sem. hrs.
Fee. S/U grade assessment. *Prereq:* *Cons. of dept ch. and cons. of SPPA M.S. dir.*

**SPPA 892. Continuous Enrollment —
Half-Time** 0 sem. hrs.
Fee. S/U grade assessment. *Prereq:* *Cons. of dept ch. and cons. of SPPA M.S. dir.*

**SPPA 893. Continuous Enrollment —
Full-Time** 0 sem. hrs.
Fee. S/U grade assessment. *Prereq:* *Cons. of dept ch. and cons. of SPPA M.S. dir.*

THEOLOGY (THEO)/ RELIGIOUS STUDIES (REST)

Chairperson and Associate Professor:
Laurance

Assistant Chairperson and Associate Professor:
Johnson

Professor: Carey (*William J. Kelly, S.J., Chair*),
Fahey (*Doerr Chair*), Goltzin, Hagen
(*Emeritus*), Kurz, Maguire, Misner (*Emeritus*),
Schultenover, Wood

Associate Professor: M. Barnes, Dabney, Del
Colle, Dempsey, Duffey, Firer Hinze,
Gawronski, Hills, Hughson, W. J. Kelly
(*Emeritus*), Massingale, Masson, Pace,
Schmitt, Zemler-Cizewski

Assistant Professor: Mattox, Mueller, Omar,
Orlov, Schaefer, Sullivan
Visiting Professor: Wriedt

Note: Faculty members and their ranks are
for the 2005–2006 academic year.

DEGREES OFFERED

Theology

Master of Arts in Christian Doctrine
(M.A.C.D.)

Master of Arts in Theology (M.A.), students
are admitted under Plan B (non-thesis option)
but Plan A (thesis option) is also offered

Religious Studies

Doctor of Philosophy

SPECIALIZATIONS

M.A.C.D.: None

M.A.: Biblical Theology, Historical Theology,
Systematic Theology

Ph.D.: Biblical Theology, Historical Theology,
Systematic Theology, Theological Ethics,
Theology and Society

PROGRAM DESCRIPTIONS

The Theology Department offers master's and doctoral programs aimed at giving students an integrated approach to theological studies, emphasizing, within theological specialties, the interaction of biblical, historical, systematic, and ethical approaches to theology. The programs seek to develop scholars who can make significant contributions to theological research and writing and college teachers who can teach a broad range of courses. This broad theological background has enabled program graduates to enjoy enviable success in securing teaching positions in over 200 colleges and universities, in church work and ministry, and in a variety of other educationally related institutions.

The master of arts in Christian doctrine (M.A.C.D.) focuses on an ecumenical appropriation and communication of Christian doctrine for those teaching in Catholic high schools, for those interested in other religious education or formation programs, and for persons interested in theological enrichment or in serving various other needs in the religious communities.

The master of arts in theology (M.A.) is intended primarily, but not exclusively, for those who intend to pursue a doctoral degree in theology or religious studies. The degree provides professional competence in the field of theological studies.

The doctor of philosophy in religious studies (Ph.D.) is a terminal academic degree producing professional specialists in one of the

areas of biblical studies, historical theology, systematics, and theological ethics, while providing supporting competence in the others as well.

PREREQUISITES FOR ADMISSION

Master of arts in theology (M.A.) applicants should have an undergraduate major in theology (religion, religious studies) or other background (e.g., classics, philosophy) appropriate for graduate study in theology. A minor in philosophy is recommended for those planning to study systematic theology. Ideally, all applicants should have some familiarity with Scripture and basic Christian doctrine. The program offers ample opportunities for making up undergraduate deficiencies. Doctoral applicants should have a master's degree or its equivalent in theology.

APPLICATION DEADLINE

February 1 Doctoral applicants must have their files completed by this date for fall admission consideration. Applicants will be notified by March 31. Doctoral students may only begin their program (religious studies) in fall.

May 15 Master of arts (M.A.) applicants must have their files completed by this date for fall admission consideration. Master's students may only begin their program in the fall.

Note: No official deadline exists for the master of arts in Christian doctrine (M.A.C.D.).

Applications are reviewed on a rolling basis.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation.
(**Note: for doctoral applicants who are continuing their degree at Marquette, three new letters of recommendation are required.**)
4. A short personal statement that includes: reasons for wanting to enter the program, vocational objectives, special areas of interest, and reasons for selecting Marquette's program.
5. GRE scores (General Test only).
6. A list of languages spoken or read, with a personal estimate of proficiency in each.
7. (*For applicants without a graduate degree*) a list of theology courses taken as an undergraduate, including names of teachers, if possible.
8. (*For international applicants only*) a TOEFL score or other acceptable proof of English proficiency.

GENERAL INFORMATION PROFICIENCY EXAMINATION

All students entering the doctoral program are required to take the master's Proficiency Examination approximately two weeks before beginning their program. Students receiving a master's degree in theology from Marquette University take the Proficiency Examination as part of their master's degree requirements.

Passing the examination demonstrates a broad, master's level competency — the equivalent of material covered in Marquette's graduate core courses — in each of the three major theological disciplines: Bible, historical theology, and systematics/ethics. The examination helps students and advisers to identify those areas which require additional preparation before beginning doctoral-level course work. This is in keeping with the character of the Marquette doctoral program in which specialization builds upon a sound knowledge of the history of the theological tradition.

The examination is in three parts, each of which has two sections.

1. Biblical: Old Testament, New Testament
2. Historical: Origin to Late Medieval, Late Medieval to Early Modern
3. Systematics and Theological Ethics

The three parts, each two hours in duration, are taken at the same examination session. Each part of the Proficiency Examination consists of at least six questions, from which the student must answer three including at least one from each section. All questions are based on the current master's bibliography and questions. Hence, the master's bibliography comprises the core reading for all master's and prospective doctoral students. The bibliography and questions are included in the information sent to prospective doctoral students upon their admittance to the program and are also available upon request. Additional information is available on the department's Web site at www.theo.mu.edu, upon request from the Theology Department or in the department's *Procedures and Policies* handbook.

Any student who does not demonstrate competency in one or more of the sections on the examination, or after a second examination during the first term, is required to take the related master's level course. These courses do not count toward the final 30 hours required for doctoral-level course work.

MASTER OF ARTS IN CHRISTIAN DOCTRINE (M.A.C.D.) REQUIREMENTS

The M.A.C.D. degree requires 30 credit hours of course work, half of which must be taken at the graduate level (courses numbered 200 or above). Up to 15 credit hours of 100-level courses are acceptable for graduate credit if additional readings and writing assignments are arranged with the respective professor and completed satisfactorily. After successfully completing all course work, students will be required to write a comprehensive examination paper that integrates what they have learned in their courses and applies what they have learned to their career goals. M.A.C.D. candidates have no foreign language requirements.

CORE COURSES AND ELECTIVES

Of the 30 total credit hours of course work, 21 credit hours must be taken from the core courses (THEO 200 [those without a B.A. in theology may take THEO 100 in lieu of THEO 200], THEO 201 [those without a B.A. in theology may take THEO 101 in lieu of THEO 201], THEO 202, THEO 203, THEO 205, THEO 206, and THEO 207), or, in certain circumstances and in consultation with a student's academic adviser, an equivalent from the 100-level courses.

For the 9 credit hours of electives (three courses), the student must choose one course in each of the principal theological disciplines: biblical, historical, and systematic.

With the permission of a student's academic adviser, the elective courses can be chosen from the following course ranges. One from any of the following biblical courses: THEO 120 to THEO 134;

One from any of the following historical courses: THEO 135 to THEO 149; and

One from any of the following systematics courses: THEO 150 to THEO 186.

MASTER OF ARTS IN THEOLOGY (M.A.) REQUIREMENTS

A master's student must complete 30 credit hours of course work, fulfill the department's foreign language requirement, pass a comprehensive examination, and submit an approved research project.

After all other requirements have been met, the Proficiency Examination is administered by the Master of Arts Examination Committee. The exam is offered in March, July, and November. A description of the exam is located in the General Information section.

The student may pursue either a Plan A or Plan B course of study. The student is assumed to be in Plan B unless a formal request to transfer to Plan A is approved by the department chairperson and the Graduate School.

The course work requirement for Plan A consists of 18 credit hours of core courses, six credit hours of electives, and six credit hours of work on the research project.

Course work for Plan B consists of 18 credit hours of core courses and 12 credit hours of electives, in addition to completing a non-credit research project.

FOREIGN LANGUAGE REQUIREMENTS

All students in the master of arts program in theology are required to pass a competency examination in German, French, or other modern foreign language recognized as essential to the student's research.

CORE COURSES AND ELECTIVES

For the master's program, a student must take 18 credit hours of required core courses (THEO 200, THEO 201, THEO 202, THEO 203, THEO 204, and THEO 205), and two courses in each of the principal theological disciplines: biblical, historical, and systematic.

In consultation with an adviser, and not later than the end of the first year of study, each student will choose a specialization (biblical, historical, or systematic). A student in Plan A must complete three credit hours of elective course work in *each* of the areas not chosen for specialization and six credit hours of work on a research project in the area of specialization. A student in Plan B must complete six credit hours of elective course work in the area of specialization and three credit hours in *each* of the other two areas.

DOCTORAL REQUIREMENTS

All students entering the doctoral program are required to take the master's Proficiency Examination. For more information, see the General Information section.

A doctoral student must complete a program of study defined on an approved *Doctoral Program Planning Form*. Within the program of study, the student must take a minimum of 60 credit hours of graduate theology course work, plus 12 credit hours of dissertation work, fulfill the department's foreign language requirement, pass qualifying examinations, and submit and successfully defend a dissertation.

FOREIGN LANGUAGE REQUIREMENTS

All doctoral candidates are required to pass a competency examination in German and either in French or in another modern foreign language recognized as essential to the student's research. Students with a master's degree from an institution other than Marquette are urged to pass their first foreign language examination before course work begins and must do so by the end of their first year in the program. Students must pass both the German and the French or other accepted modern language examinations by the end of their second year in the program. Examinations are administered by the Department of Foreign Languages and Literatures which also offers courses in preparation for the examination.

Candidates who specialize in Old Testament/Hebrew Bible studies must also pass examinations in Hebrew at the advanced level and Greek at the intermediate level of competence.

Candidates who specialize in New Testament studies must also pass examinations in Greek at the advanced level and Hebrew at the intermediate level of competence.

Candidates in Historical Theology and in Systematics/Ethics within the Western theological traditions must also pass a competency examination in Latin; those studying within other theological traditions must pass a competency examination in Latin, or Greek, or another ancient language recognized as essential to the student's research.

Graduate theology students may use 3 or 6 of their program credits for language courses at each graduate level (master's and doctoral), with not more than 9 total credits for the course requirements at both levels combined, i.e., 9 of 60 credits of total course work. Language courses for graduate theology students will be taught either in the Department of Theology or in the Foreign Language and Literatures Department utilizing theological texts approved by the Department of Theology in the teaching and in the testing. The Department of Theology will determine the needed levels of competency for each language appropriate to a student's particular area of theological concentration.

CORE COURSES AND ELECTIVES

The doctoral program in religious studies offers five areas of specialization. The doctoral qualifying examination will emphasize the student's chosen area of specialization.

A student specializing in biblical theology, historical theology, systematic theology, or theological ethics must complete 36 credit hours of course work in the area of specialization and approximately 12 credit hours of course work in each of two other areas.

A student in the theology and society specialization must complete at least 30 credit hours of theology course work (primarily in one

area of specialization: biblical, historical or systematic ethics) selected around the theology and society theme, a total of at least 18 credit hours in two other areas of theology, and 12 credit hours in one or more related human sciences (anthropology, economics, education, English, history, philosophy, political science, psychology, sociology). These students may be required to take additional course work, beyond the 60-credit-hour requirement, to certify their qualifications in both theology and the allied discipline. Qualifying examinations and dissertation topics for doctoral students in the theology and society specialization are expected to reflect the cross-disciplinary nature of the course work.

COURSE DESCRIPTIONS

For master's and doctoral students who have not demonstrated adequate competency on the Proficiency Examination, the core courses in each area are prerequisites for all other courses in that area.

All courses have the prerequisite of consent of department chairperson.

UPPER DIVISION COURSES THAT MAY CARRY GRADUATE CREDIT:

THEO 100. Hebrew Scriptures/Old Testament Overview 3 sem. hrs.

THEO 101. New Testament Overview 3 sem. hrs.

THEO 120. Digging the Bible: Archeology and Biblical Studies 3 sem. hrs.

THEO 122. The Bible in Its Interpretive Communities 3 sem. hrs.

THEO 126. The Bible in the Jewish Community 3 sem. hrs.

THEO 129. Women in the Bible 3 sem. hrs.

THEO 134. Special Topics in Biblical Theology 3 sem. hrs.

THEO 135. Theology in the Early Church 3 sem. hrs.

THEO 137. History and Theology of the Christian East 3 sem. hrs.

THEO 138. St. Augustine: The Man and the Theologian 3 sem. hrs.

THEO 140. Theology in the Middle Ages 3 sem. hrs.

THEO 141. Theology in the Thirteenth Century 3 sem. hrs.

THEO 142. Theology in the Reformation Era 3 sem. hrs.

THEO 143. Martin Luther 3 sem. hrs.

THEO 146. Theology in America 3 sem. hrs.

THEO 148. American Catholic Life and Thought 3 sem. hrs.

THEO 149. Special Topics in Historical Theology 3 sem. hrs.

THEO 150. Contemporary Atheism and Theism 3 sem. hrs.

THEO 154. Theology of the Holy Spirit 3 sem. hrs.

THEO 155. Jesus the Christ 3 sem. hrs.

THEO 157. Theology of the Church 3 sem. hrs.

THEO 158. Sacraments and Christian Life 3 sem. hrs.

THEO 159. The Eucharist 3 sem. hrs.

THEO 161. Christian Prayer and Mysticism 3 sem. hrs.

THEO 163. Protestant Thought and Practice 3 sem. hrs.

THEO 164. Special Topics in Systematic Theology 3 sem. hrs.

THEO 165. Christian Faith and Justice 3 sem. hrs.

THEO 166. Christian Theology in Global Contexts 3 sem. hrs.

THEO 167. Family, Church and Society 3 sem. hrs.

THEO 168. Theology, Violence and Non-Violence 3 sem. hrs.

THEO 170. Theology and the Natural Sciences 3 sem. hrs.

THEO 171. Foundations of Ecological Ethics 3 sem. hrs.

THEO 175. Medical Ethics 3 sem. hrs.

THEO 178. Faith, Justice & Social Change 3 sem. hrs.

THEO 179. Special Topics in Moral Theology 3 sem. hrs.

THEO 180. Christ and World Religions: Theology of Interreligious Dialogue 3 sem. hrs.

THEO 182. Survey of World Religions 3 sem. hrs.

THEO 184. Jewish Thought and Practice 3 sem. hrs.

THEO 185. Islam: Faith and Practice 3 sem. hrs.

THEO 186. Hinduism, Yoga and Buddhism 3 sem. hrs.

GRADUATE COURSES:

THEO 200. Old Testament Method 3 sem. hrs.
Introduction to the history, literature, and religion of ancient Israel. History and methods of interpretation. Offered annually.
Prereq: Cons. of dept. ch.

THEO 201. New Testament Method 3 sem. hrs.

Background, geography, text, language, versions, editions. Principal problems in individual

books. Exegetical techniques. Hermeneutical principles. Offered annually. *Prereq: Cons. of dept. ch.*

THEO 202. Origen to Late Medieval 3 sem. hrs.

A brief introduction to historiography and historical method with a more focused introduction to major theological issues and debates (e.g., scripture and tradition; trinity; christology; grace and sacraments; faith and reason; church and state) and to some of the key contributions of major eastern and western theologians (e.g., Origen, Augustine, Pseudo-Dionysius, John of Damascus, Anselm, Abelard, Gregory Palamas, Aquinas, Bonaventure, Scotus). Offered alternate fall terms. *Prereq: Cons. of dept. ch.; required for all master's candidates.*

THEO 203. Late Medieval to Early Modern 3 sem. hrs.

A basic introduction to theological developments from 1350 to the end of the Enlightenment (1800). Major theological movements and the thought of major thinkers (e.g., Ockham, Biel, Erasmus, Luther, Calvin, Bellarmine, Bossuet, Pascal, Spener, Edwards, Lessing, Kant) will be examined within their social, historical, and philosophical contexts. Offered alternate fall terms. *Prereq: Cons. of dept. ch.; required for all master's candidates.*

THEO 204. Introduction to Systematic Theology 3 sem. hrs.

Relation of systematic theology to faith, revelation (the Bible, Church creeds and doctrines), and the Church. The role of biblical exegesis, historical scholarship, philosophy, natural and human sciences in systematic theology. Derivation of various categories, subdivisions, and methods of systematic theology. The challenges and prospects of interconfessional and interreligious dialogue for systematic theology. Offered annually. *Prereq: Cons. of dept. ch.*

THEO 205. Introduction to Theological Ethics 3 sem. hrs.

Systematic survey of the fundamental categories, concepts and norms used in moral theology to analyze human moral experience. The role of Scripture and tradition as foundational sources in moral theology. The church as the locus for Christian moral reflection. Pivotal issues in the historical development of moral theology. The relation of moral philosophy to moral theology. Offered annually. *Prereq: Cons. of dept. ch.; required for master's core curriculum.*

THEO 206. Christian Doctrine 1 3 sem. hrs.

A historical and theological introduction to the formation and development of the Christian doctrines of the Trinity, Christology, and Pneumatology. Focuses on the interrelationships of these doctrines. *Prereq: Cons. of dept. ch.*

THEO 207. Christian Doctrine 2 3 sem. hrs.

A historical and theological introduction to the Christian doctrines of Church, sacraments, and eschatology. Focuses on the interrelationships of these doctrines with one another and with those in Christian Doctrine 1. *Prereq: THEO 206 and cons. of dept. ch.*

THEO 208. Intensive Hebrew Grammar

3 sem. hrs.

Introduction to Biblical Hebrew. Emphasis will be placed on grammar, verb syntax, and vocabulary acquisition. *Prereq:* *Cons. of dept. ch.*

THEO 209. Advanced Hebrew 3 sem. hrs.

Reading of selected narrative and poetic books. Advanced grammar. Offered occasionally. *Prereq:* *Cons. of dept. ch.*

THEO 210. Sources of Pentateuchal Thought 3 sem. hrs.

Detailed study of the first five books of the Old Testament. Exegesis of selected passages. Offered occasionally. *Prereq:* *Cons. of dept. ch.*

THEO 211. The Prophetic Movement in Israel 3 sem. hrs.

Key themes in the prophetic movement. Relation of the prophets to the cult, society, and history of ancient Israel. Offered occasionally. *Prereq:* *Cons. of dept. ch.*

THEO 212. Psalms and the Cult of Israel 3 sem. hrs.

A study of the literary, theological, and historical dimensions of the book of Psalms. Relationship between the psalms and cultic life. Offered occasionally. *Prereq:* *Cons. of dept. ch.*

THEO 213. The Deuteronomistic History 3 sem. hrs.

Deuteronomy, Joshua, Judges, Samuel, and Kings. The structure, sources, narrative technique, and theology of the Deuteronomistic corpus. Hebrew text used. Offered occasionally. *Prereq:* *Cons. of dept. ch.*

THEO 214. The Wisdom of Israel 3 sem. hrs.

Study of the place of Wisdom Literature in the development of Hebrew thought. Exegesis of selected passages. *Prereq:* *Cons. of dept. ch.*

THEO 221. Intertestamental Literature 3 sem. hrs.

Study of the books of the Old Testament Apocrypha and Pseudepigrapha. Other developments of the period. Exegesis of selected passages. Offered occasionally. *Prereq:* *Cons. of dept. ch.*

THEO 224. Intensive Hellenistic Greek Grammar 3 sem. hrs.

An introduction to the Greek of the Hellenistic era, including the New Testament. Emphasis on grammar, syntax, vocabulary acquisition and historical context and theology. *Prereq:* *Cons. of dept. ch.*

THEO 225. Advanced Hellenistic Greek 3 sem. hrs.

Advanced grammar; readings in texts from 300 BC to AD 300. Emphasis on the language of the New Testament as reflective of continuity and change in Greek vocabulary, morphology, syntax, style, and the historical context and theology of these texts. *Prereq:* *Cons. of dept. ch.*

THEO 226. Hellenistic Backgrounds to the New Testament 3 sem. hrs.

Introduction to various Graeco-Roman issues and movements which influenced the development of New Testament writings. Study of traditional religion, mystery cults, philosophical schools, astrology and magic, literary genres

and tendencies, and other related topics.

Offered occasionally. *Prereq:* *Cons. of dept. ch.*

THEO 227. Judaism in the Hellenistic Era 3 sem. hrs.

Jewish history, institutions, movements, and writings of this period, including Qumran, as they pertain to biblical studies. Jewish interpretation of scripture; midrash; haggadah and halakah; targums; Hellenistic influences on Judaism in Palestine and the diaspora; other related topics. Offered occasionally. *Prereq:* *Cons. of dept. ch.*

THEO 228. Apocalyptic Literature 3 sem. hrs. Origin and development of prophetic and apocalyptic eschatology. The social and religious phenomenon of apocalypticism. The genre "apocalypse" in Jewish and early Christian tradition. Offered occasionally. *Prereq:* *Cons. of dept. ch.*

THEO 229. Formation of the Gospel Tradition 3 sem. hrs.

Literary interrelationship of the four Gospels. Theories of Gospel priority and dependence. Development of oral and written traditions. Distinctive character of the Gospel form. Greek text used. Offered occasionally. *Prereq:* *Cons. of dept. ch.*

THEO 230. Matthew 3 sem. hrs.

Formation, structure, and style of the Gospel of Matthew. Redactional and literary analysis of the Gospel to reconstruct the theology and the situation which produced it. Exegesis of selected passages. Greek text used. Offered occasionally. *Prereq:* *Cons. of dept. ch.*

THEO 231. Mark 3 sem. hrs.

Formation, structure, and style of the Gospel of Mark. Redactional and literary analysis of the Gospel to reconstruct the theology and the situation which produced it. Exegesis of selected passages. Greek text used. Offered occasionally. *Prereq:* *Cons. of dept. ch.*

THEO 232. Luke-Acts 3 sem. hrs.

Formation, structure, and style of Luke-Acts. Redactional and literary analysis of these two volumes to reconstruct the theology and the situation which produced them. Questions of Christian origins. Exegesis of selected passages. Greek text used. Offered occasionally. *Prereq:* *Cons. of dept. ch.*

THEO 233. The Johannine Tradition 3 sem. hrs.

Formation, structure, and style of the Gospel of John. Source, redaction, and literary analysis to reconstruct the stages of formation and their corresponding theologies. Relation of the Johannine letters to the Gospel. Exegesis of selected passages. Greek text used. Offered occasionally. *Prereq:* *Cons. of dept. ch.*

THEO 234. Letter to the Romans 3 sem. hrs.

Background and purpose of this letter. Examination of important Pauline themes, issues, and methods of argumentation. Exegesis of selected passages. Greek text used. Offered occasionally. *Prereq:* *Cons. of dept. ch.*

THEO 235. The Corinthian Correspondence 3 sem. hrs.

Study of I and/or II Corinthians in the context of Paul's pastoral relationship to Corinth. Integrity,

background and purpose of the letters.

Examination of important themes, issues, and methods of argumentation. Exegesis of selected passages. Greek text used. Offered occasionally. *Prereq:* *Cons. of dept. ch.*

THEO 236. Shorter Pauline Letters 3 sem. hrs.

Study of one or more of the following letters: Galatians, Philippians, I and II Thessalonians, and Philemon. Background and purpose of these writings. Examination of important Pauline themes, issues, and methods of argumentation. Exegesis of selected passages. Greek text used. Offered occasionally. *Prereq:* *Cons. of dept. ch.*

THEO 237. Colossians and Ephesians 3 sem. hrs.

Authorship, milieu, and purpose of these letters. Their relationship to one another and to other Pauline traditions. Review of critical issues and examination of theological themes and methods of argumentation. Exegesis of selected passages. Greek text used. Offered occasionally. *Prereq:* *Cons. of dept. ch.*

THEO 238. Later New Testament Writings 3 sem. hrs.

Study of one or more of the following New Testament texts: I and II Timothy; Titus; Hebrews; James; I and II Peter; I, II, and III John; Jude; and Revelation 1-3. Background, purpose, and theology of these writings. Exegesis of key passages. Relationship of these works to selected non-canonical writings. Greek text used. Offered occasionally. *Prereq:* *Cons. of dept. ch.*

THEO 239. Aramaic Dialects 3 sem. hrs.

Provides the student who already has a background in Biblical Hebrew with a survey of Aramaic dialects, ranging from Ancient Aramaic to Syriac. Includes biblical Aramaic and Qumran Aramaic. Emphasis on providing the student with the tools to use these dialects in other biblical courses. *Prereq:* *Cons. of dept. ch.*

THEO 250. Ecclesiastical Historiography 3 sem. hrs.

The interpretation of the history of the Church and of doctrine as seen by ecclesiastical historians from Eusebius to Harnack; their characteristic approaches and concerns. Recent trends in historiography and historical theology. Offered occasionally. *Prereq:* *Cons. of dept. ch.; may not be taken for credit by students who have taken the same course as THEO 290.*

THEO 251. History of Christian Thought 1: The Age of the Fathers 3 sem. hrs.

A study of the development of Christian beliefs and doctrines in the patristic age. The following themes are treated: the authority of Scripture and tradition; Father, Word, Spirit, and the divine Triad; the person of Jesus the Christ; sin, redemption and grace; the Church and the sacraments. Offered in cycle with THEO 252-256. *Prereq:* *Cons. of dept. ch.*

THEO 252. History of Christian Thought 2: Byzantine Tradition 3 sem. hrs.

Survey of Greek theology from Nicea (325 A.D.) to the fall of Constantinople (1453). Particular attention to the most important writers following the Council of Chalcedon, beginning with Dionysius Areopagita and concluding with Gregory Palamas and Nicholas Cabasilas.

Focus on the abiding Greek preoccupation with salvation as deification and its contribution to the continuity of Eastern Christian thought. Offered in cycle with THEO 251 and 253-256. *Prereq: Cons. of dept. ch.*

THEO 253. History of Christian Thought 3: The Middle Ages 3 sem. hrs.

A study of the development of Christian theology from Augustine to Thomas Aquinas. Includes the following themes: the character and method of theology after Augustine; monastic theology; the early Eucharistic controversies; reason, logic, and the origins of Scholasticism; 12th century humanism and theology; Scholasticism; and Thomism. Offered in cycle with THEO 251, 252, and 254-256. *Prereq: Cons. of dept. ch.*

THEO 254. History of Christian Thought 4: The Later Middle Ages and the Reformation 3 sem. hrs.

Theological pluralism of 13th-15th centuries. Thomism and nominalism, mysticism and humanism, conciliarism, Augustinianism. Reform, questions of authority, faith, catholicity. Sixteenth century responses. Luther to Calvin, Muenster to Menno Simons, early Roman Catholic polemical theology to Trent. Offered in cycle with THEO 251-253, 255, and 256. *Prereq: Cons. of dept. ch.*

THEO 255. History of Christian Thought 5: The Modern Era 3 sem. hrs.

A study of major developments in Christian life and thought in the 17th-19th centuries in Europe, with a focus on intellectual history. Jansenism and Cartesianism; the impact of Enlightenment thought. The Romantic revivals of theology in Schleiermacher and the Tübingen Schools. German Idealism and its debacle. Biblical criticism. Varieties of 19th century options in theology. Offered in cycle with THEO 251-254 and 256. *Prereq: Cons. of dept. ch.*

THEO 256. History of Christian Thought 6: Theology in America 3 sem. hrs.

An analysis of developments in American theology from Puritanism to the present. Representative theologians of Puritanism, revivalism, enlightenment, progressive orthodoxy, social gospel, modernism, Americanism, and neo-orthodoxy will be examined within the context of American political and social movements. Themes considered: the church, grace, religious liberty, church and state, voluntarism, person of Jesus, tradition, adaptation. Offered in cycle with THEO 251-255. *Prereq: Cons. of dept. ch.*

THEO 257. The Apostolic Fathers and the Apologists 3 sem. hrs.

A study of the Christian writings of the Second Century, especially Clement of Rome, Ignatius of Antioch, the Epistle of Barnabas, the Didache, the Greek apologists, and Irenaeus, with particular attention to their relation to the Old and New Testaments, the doctrine of the Logos, Church order, and the emerging understanding of orthodoxy and heresy. Offered occasionally. *Prereq: Cons. of dept. ch.; may not be taken for credit by students who have taken the same course as THEO 255.*

THEO 258. Clement, Origen and the Alexandrian Tradition 3 sem. hrs.

Against the background of Clement's attempt to incorporate Greek modes of thought into Christianity, an extensive study of Origen as a biblical commentator and the first systematic theologian, with some consideration of the neo-platonic tradition in Christianity, Origen's influence on later theology, and the Origenist controversies. Offered occasionally. *Prereq: Cons. of dept. ch.; may not be taken for credit by students who have taken the same course as THEO 257.*

THEO 259. The Greek Fathers of the Fourth Century 3 sem. hrs.

Reading and study of some of the writings of Athanasius, Basil the Great, Gregory of Nazianzus, Gregory of Nyssa and others, with attention given to the Trinitarian controversies of the Fourth Century, the councils of Nicea and Constantinople, and the rise and fall of Arianism. Offered occasionally. *Prereq: Cons. of dept. ch.; may not be taken for credit by students who have taken the same course as THEO 258.*

THEO 260. History and Theology of the New Testament Canon 3 sem. hrs.

The Septuagint as the first Christian Bible; authority for religious truth in the Apostolic Fathers and the Apologists; evidence for the liturgical use of Christian writings; the apocryphal New Testament; the canon of four gospels; the collection of the Apostles' letters; lists of canonical books; the beginnings of exegesis; modern theological speculation on the canon. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 261. Augustine of Hippo 3 sem. hrs.

An intensive study of Augustine's life, writings and thought. Topics include: the influence of neoplatonism on Augustine, the stages of his conversion, the implications of the Donatist controversy for his views on the Church and the sacraments, and the controversy with Pelagius on grace and predestination. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 262. Monastic Theology 3 sem. hrs.

Proposes a reading of the classical "canon" of early monastic literature. Beginning with a few sessions devoted to sources, the course moves to the early Syrians, notably Aphrahat of Persia and Ephrem Syrus, and then to the better-known and enormously influential "Vita Antonii," the several "Vitae" of Pachomius, the "History of the Monks of Egypt," Basil the Great's "Longer and Shorter Rules," Gregory of Nyssa, Evagrius of Pontus, the "Macarian Homilies," such early fifth-century works as Palladius of Hieropolis' "Lausiac History," John Casian's "Institutes" and "Conferences," Theodore of Cyrrhus' "Historia religiosa," and the "Sayings of the Desert Fathers." Concludes with an examination of Benedict of Nursia's "Life" (by Gregory the Great) and "Rule." Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 263. Theology in the 12th Century 3 sem. hrs.

Survey of theology in monasteries and cathedral schools, from the Gregorian Reform to Alan of Lille, including; e.g., Anselm of

Canterbury, Peter Abelard, Bernard of Clairvaux, the Victorines, Peter Lombard. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 264. The Theology of Thomas Aquinas 3 sem. hrs.

The critical reading of the texts of Aquinas in developmental sequence with emphasis on the character of the *Summa Theologiae*. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 265. The Theology of Bonaventure 3 sem. hrs.

Readings and study of both the academic and the mystical writings of Bonaventure, with special emphasis on the Breviloquium. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 266. The Study of the Bible in the Middle Ages 3 sem. hrs.

Medieval exegesis from the Carolingian renaissance to the 13th century, with special attention to the relationship between scripture commentaries and systematic theologies; the multiple senses of Scripture in theory and practice; authors include; e.g., Rupert of Deutz, Bernard of Clairvaux, the Victorines, Aquinas and his teachers. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 267. Dionysius the Areopagite: Father of Mysticism? 3 sem. hrs.

Intended to be primarily a close reading of (Pseudo-) Dionysius the Aeropagite (ca. 500), whose small corpus of works profoundly influenced subsequent Christian thought. Analyzes his background, his treatises and "epistles," noting his sources and parallels in preceding and contemporary Christian, pagan Neoplatonist, and Jewish mystical literature. Also traces out the Dionysian "trajectory" in selected later Eastern Christian writers. *Prereq: THEO 202 and cons. of dept. ch.; or a passing grade on the relevant section of the M.A. Exam.*

THEO 268. Symeon the New Theologian-Sources and Heirs 3 sem. hrs.

Examines Symeon the New Theologian (949-1022), the most striking and attractive of the Byzantine spiritual writers. Too often, however, he is treated somewhat in isolation from the sources and currents which feed him. Proposes to spend much time on those sources, beginning with fifth-century writers such as Diadochus of Photiki and Mark the Monk, running through Dionysius, Maximus, and John of the Ladder in the sixth-seventh centuries (with perhaps a look at the "Gaza School" and Palestinian monasticism), and continuing through Symeon, to whom several weeks will be devoted, to the Hesychasts of the fourteenth and fifteenth centuries, notably Gregory of Sinai and Gregory Palamas. *Prereq: THEO 202 and cons. of dept. ch.; or a passing grade on the relevant section of the M.A. Exam.*

THEO 269. Late Medieval Augustinianism 3 sem. hrs.

Revival of Augustinian thought. Wyclif, Hus to Bradwardine. Via Gregorii. Commentaries on St. Augustine. Anti-Pelagianism and Donatism. Mediation of Augustinian thought to subsequent periods. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 270. Interpretation of the Bible in the Renaissance and Reformation 3 sem. hrs.

Hermeneutical developments from the Victorines. Sources and methods for interpreting historical exegesis. Humanist work on Scripture. The place of the Bible in theology. Luther as doctor of Scripture. Trent and Bible study. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 271. Erasmus 3 sem. hrs.

Biography and developments of his thought. Study of Scripture and the classics. Commentaries on Scripture. Philosophia Christi. Changing attitudes toward Erasmus. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 272. Luther 3 sem. hrs.

Developments of Luther's thought in relation to medieval theology. Influence of nominalism and mysticism on Luther. Origins of his hermeneutic and doctrine of justification. Importance of his theology of reformation, law/gospel, and man. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 273. Calvin 3 sem. hrs.

Biography and development of his major writings. Systematic construction of the Institutes of the Christian Religion. Calvin on Scripture, sanctification and predestination, and early results in Calvinism. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 274. Council of Trent 3 sem. hrs.

The positive contribution of Trent to the history of Christian thought. The "medieval" and "modern" character of the council. Trent's understanding of the reformers, and the question of "Counter-Reformation." Trent's position on Scripture and tradition, and its justification. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 275. PreNicene Ascetical and Mystical Literature 3 sem. hrs.

A survey of Christian literature primarily from East of the Adriatic (at least as presently constituted), dealing with asceticism and the "visio Dei." Begins with Old Testament materials, looks at intertestamental literature including the Qumran Scrolls, and trajectories extending from the Second Temple to Rabbinic-era, Jewish mystical texts. Then moves to the New Testament, with special attention to Paul and Luke-Acts, and continues through the early martyrologies and New Testament apocrypha, in particular the apocryphal acts of the Apostles, and early Manichean materials. Concludes with the Alexandrians, Clement and Origen, and if possible Methodius of Olympus at the turn of the fourth century. *Prereq: THEO 202 and cons. of dept. ch.; or a passing grade on the relevant section of the M.A. Exam.*

THEO 276. Theological Thought of the Enlightenment and the Nineteenth Century 3 sem. hrs.

Important theological developments, including movements and thinkers, in both the Catholic and Protestant traditions, in both Europe and America from the beginning of the Modern Era. Possible movements to be covered in this order: Deism, Rational Supernaturalism, Pietism, Romanticism, Speculative Idealism, French Catholic Thought (Traditionalism, Fideism), Oxford Movement, Tübingen School, Protestant Liberalism, Biblical Criticism and

Darwinism, Ultramontanism and Neo-Thomism, Roman Catholic Thought and Modernism, Existentialism, and Atheism. Possible figures to be covered more or less in this order: Herbert of Cherbury, Tillotson, Locke, Toland, Tindal, Voltaire, Wolff, Semler, Reimarus, Lessing, Rousseau, Butler, Hume, Kant, Jacobi, Hamann, Herder, Coleridge, Schleiermacher, Busnell, Hegel, F. C. Baur, Biedermann, John and Edward Caird, Chateaubriand, Maistre, Lamennais, Bautain, Keble, Newman, Williams, Pusey, Drey, Möhler, Strauss, Feuerbach, Marx, Williams, Goodwin, Jowett, Darwin, Moore, Hodge, Abbott, Ritschl, Herrmann, Harnack, Rauschenbusch, Hodge, Warfield, Leo XIII, Mercier, Garrigou-Lagrange, Ollé-Laprune, Blondel, Laberthonniere, Loisy, Le Roy, Tyrrell, Kierkegaard, Nietzsche. Not all significant movements and thinkers can be covered in one semester. *Prereq: THEO 202, THEO 203, and THEO 204, or their equivalents (i.e., the masters-level introductory courses), unless the student has passed out of this material on the MA exam.*

THEO 277. Schleiermacher 3 sem. hrs.

A close reading of the most important theological works of F. D. E. Schleiermacher (1768-1834), the "father of modern theology," with a view to understanding the basic concepts and historical development of Schleiermacher's thought within the context of post-Enlightenment European philosophical-theological ideas and movements. *Prereq: THEO 202 and THEO 203, or their equivalents (i.e., the master's-level introductory courses on the history of theology), unless the student has passed out of this material on the M.A. exam.*

THEO 278. The Development of Roman Catholic Theology from the Enlightenment to the Present 3 sem. hrs.

Focuses on the historical development of Roman Catholic theology from the Enlightenment to the present. Treats movements such as French Romanticism, Gallicanism, Ultramontanism, Newmanism, Modernism, New Theology and Transcendental Thomism, Vatican II and post-Vatican II developments. Despite its historical emphasis, the course treats the thought of selected Roman Catholic theologians: In the 19th century: French theologians Chateaubriand, de Maistre, Lamennais, Bautain; the Tübingen theologians (e.g., Drey, Möhler); Newman and the Oxford Movement; the New Apologetics (e.g., Blondel, Laberthonniere); the "Modernists" (e.g., Loisy, Tyrrell). In the 20th century: New Theology and Transcendental Thomism (e.g., Rousselot, Marechal, de Lubac, Karl Rahner, Lonergan, Schillebeeckx); Liturgical Movement (e.g., Jungmann, Casel, Dix); Vatican II and Aggiornamento (e.g., Congar, Kung, Courtney Murray, Balthasar, Ratzinger); Political and Liberation Theologies (e.g., Metz, Gutierrez, Segundo, Leonard Boff); Feminist Theology (e.g., Schussler Fiorenza, Radford Ruether, Pilar Aquino). *Prereq: THEO 202, THEO 203, and THEO 204, or equivs. (i.e., the master's-level introductory courses), unless the student has passed out of this material on the M.A. exam.*

THEO 279. History of Christian Theology in the 20th Century 3 sem. hrs.

Possible schools/movements and figures to be covered: Eschatological school (J. Weiss, Schweitzer), Religionsgeschichtliche Schule (Troeltsch), American Empiricism and Naturalism (William James, D.C. Macintosh, Dewey, Wieman), Dialectical Theology (Barth, Brunner, Gogarten, Bonhoeffer), Christian Existentialism (Marcel, Tillich, Bultmann), Christian Realism (H.R. Niebuhr, Reinhold Niebuhr), the Nouvelle Theologie and Transcendental Thomism (Rousselot, Marechal, de Lubac, K. Rahner, Lonergan, Schillebeeckx), Vatican II and renewed Roman Catholic Theology (Congar, John XXIII, Kung, John Courtney Murray, Balthasar, Ratzinger), Political Theology and Liberation Theologies (Metz, Moltmann, Gutierrez, Segundo, L. Boff, Sobrino). Not all of these movements and figures can be covered in one semester. *Prereq: THEO 202, THEO 203, and THEO 204, or equivs. (i.e., the master's-level introductory courses), unless the student has passed out of this material on the M.A. exam.*

THEO 280. Images of the Church through the Ages 3 sem. hrs.

Covers the historical journey of the Christian church as it began and developed through its leading images/symbols/models. *Prereq: THEO 202, THEO 203, and THEO 204, or equivs. (i.e., the master's-level introductory courses), unless the student has passed out of this material on the M.A. exam.*

THEO 281. The Roman Catholic Modernist Crisis 3 sem. hrs.

Modernist controversies as the explosion of tensions long building between liberalism and orthodoxy, immanentist and extrinsicist religious thought, and tradition and critical history before and after 1900. An interpretation of the episodes in Roman Catholic theology (concerning Loisy, Blondel, von Hugel, Tyrrell) that formed the backdrop to the generation of Vatican II. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 283. Theology of Jonathan Edwards 3 sem. hrs.

Examines Edwards' major theological works and analyzes his chief contributions to American theology. Particular focus on Edwards' understanding of God, original sin, the atonement, freedom, religious experience, true virtue, providence, and the millennium. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 284. Theology in the American Enlightenment 3 sem. hrs.

Reason has played a significant role in the American understanding of Christianity. Examines how the Enlightenment influenced Christian thought in the United States between 1700 and 1830, paying special attention to the issues raised by critical reason relative to the understanding of revelation, Christ, the supernatural, church and state, and Christians; e.g., the Unitarian W. E. Channing, the Princetonian Presbyterian C. Hodge, and the Catholic J. England. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 285. Theology and Romanticism in the United States 3 sem. hrs.

Examines representative American Protestant and Catholic theologies that were most directly influenced by Romanticism; e.g., the Transcendentalism of R. W. Emerson and T. Parker, the Progressive Orthodoxy of H. Bushnell, the Mercersburg Theology of W. Nevin and P. Schaff, the Ontologism and moderate traditionalism of O. Brownson and I. Hecker, the Confessionalism of C. P. Krauth. Concentration upon the roles these theologians assigned to revelation, divine immanence in history, church and society, religious intuition, ecclesiastical and confessional authority. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 286. American Catholic Theology 3 sem. hrs.

A historical examination of the theologies of American Catholics from John Carroll to John Courtney Murray. Analysis of major pastoral and systematic theologians (e.g., John England, Francis P. Kenrick, Orestes Brownson, Isaac Hecker, John Ireland, John A. Ryan, Gustave Weigel) within the context of American and European theological developments. Examination of American Catholic perceptions of Christology, grace, ecclesiology, church-state relations, social thought, the Bible, and modern sciences with a focus upon the relationship of religion and republicanism. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 287. The Social Gospel in American Theologies 3 sem. hrs.

Examinations of the social thought of representative American Protestants and Catholics of the late 19th and early 20th centuries, concentrating upon the various perceptions of Christianity's relationship to the social and economic problems of the day. Analysis of the works of Washington Gladden, Richard Ely, Josiah Strong, Walter Rauschenbusch, Edward McGlynn, John A. Ryan, Paul H. Furfey, Dorothy Day, and Virgil Michel. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 294. Special Institute in Theology 2-6 sem. hrs.

Different institutes offered during summer sessions, with the specific topic announced in the Summer Studies Bulletin each time. These are designed to cover various special topics, particularly in Religious Education, but not restricted to that. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 295. Independent Study 1-3 sem. hrs.

Offered every term. *Prereq: Cons. of dept. ch.*

THEO 298. Topics in Biblical Languages 3 sem. hrs.

A graduate-level course offered at St. Francis Seminary covering the grammar and vocabulary of Biblical Hebrew or Greek. *Prereq: Cons. of dept. ch. May be taken for credit by students enrolled in degree programs in the Theology Department at Marquette University. May not be counted toward the required minimum hours of M.A. or Ph.D. course work.*

THEO 299. Master's Thesis 3-6 sem. hrs.

Offered every term. *Prereq: Cons. of dept. ch.*

THEO 301. Christian Anthropology 3 sem. hrs.

Different concepts of anthropology today. The central interest in anthropology in different fields including philosophy and theology in the last 50 years. The relationship between anthropology, theology, Christology. Human existence according to the Old and New Testaments. The realities of history, world, and freedom as related to meaning in human existence. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 302. Atheism and Theism 3 sem. hrs.

Exploration of the basic theistic and atheistic options regarding the ultimate meaning and value of human life. Socio-cultural and religious roots of these options. Criteria of truth for determining validity. Examination of representative writings, classical and modern, which discuss these options. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 303. God in Contemporary Theology 3 sem. hrs.

Nineteenth and 20th century roots (philosophical, social, and religious) of present understandings of God. Classical and contemporary discussion of the nature and validity of theistic language. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 304. The Structure of Religious Experience 3 sem. hrs.

Analysis of the structure of religious experience and related phenomena as explored through a variety of perspectives such as philosophy, sociology, psychology, and theology. The nature and function of religion in human life in relation to the individual and social development of the human person. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 305. Hermeneutic Theory and Theological Method 3 sem. hrs.

Nineteenth century hermeneutical discussion. Contemporary hermeneutical inquiries and their methodological implications for theology. Phenomenology and hermeneutical theory. Bultmannian and post-Bultmannian developments. Hermeneutics and the critique of ideologies. Points of contact between hermeneutics and linguistic analysis. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 306. Philosophy as Source and Resource for Theology 3 sem. hrs.

Critical examination of philosophical texts which have played an important role in framing theological questions and discussions; of representative theological texts for how philosophical issues and presuppositions bear on their interpretation; of representative accounts (historical and contemporary) of the relationship between theology and philosophy. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 310. Faith, Revelation, and Doctrine 3 sem. hrs.

Faith as the starting point for knowledge of God, knowledge of self, and knowledge of the world. The knowledge had in faith compared to other forms of human knowledge. Centrality of faith in the Biblical texts. Faith as the response to revelation. Nature of revelation. Nature and function of tradition. Inerrancy and infallibility. Relationship of historical interpretation to scripture and tradition. Offered occasionally.

Prereq: Cons. of dept. ch.

THEO 311. Christian Theism: The Trinity 3 sem. hrs.

Historical and systematic presentation of the doctrine of the Trinity. The development of this doctrine in early Christian history. The notions of substance, person, procession, relation, and communion as they occur in patristic tradition and in later Scholastic theology. Other approaches to this doctrine in the light of contemporary philosophy and theology. Role of this doctrine in contemporary Christian experience. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 314. Christology: The Incarnation 3 sem. hrs.

Historical and systematic presentation of the doctrine of the Incarnation. Christ, the Mediator between God and humanity, as the fullness of all revelation. Christology in the New Testament. The development of the doctrine of the Incarnation in the Christian church with special attention given to the councils of Ephesus and Chalcedon, Scholastic theology, and contemporary approaches to the mystery of Jesus. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 316. Soteriology: The Redemption 3 sem. hrs.

Specific redemptive function of Jesus Christ and then of the Christian community, the sacraments and the world in which one lives. Grace and human development. Salvation as a personal and societal reality; redemption of the social order. Salvation of the nonbeliever, in particular the relationship between salvation and revelation. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 322. Ecclesiology: The Christian Community in Context 3 sem. hrs.

Biblical understanding of the Christian community. Development of the institutional church through history. Current theological models of the church. Current discussion of the mission, functions, and structures of the church in the world today. The relation of the Christian churches to one another. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 324. Theology of Christian Liturgy 3 sem. hrs.

A systematic study of the Church at prayer in Trinitarian and ecumenical perspectives. The Church's faith in God's saving action through its own ritual self-offering seen in light of human sciences, phenomenology and Christian doctrine. Liturgy examined as symbolic communion, as actualization of Christian community, and in its relationship to the rest of Christian life and theology. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 326. Christian Eschatology 3 sem. hrs.

Analysis of Biblical and historical forms of Christian eschatology. Comparison of Christian perspectives with cyclic approaches to history and apocalyptic approaches to the end of history. The centrality of eternal life to the Christian message of the Kingdom of God. Resurrection as the principal locus of Christian expectations. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 327. Major Figures in Modern Theology 3 sem. hrs.

Intensive examination of the writings of a thinker who has had a significant impact on theology within the last hundred years. Focuses on the primary texts of a particular theologian or school of thought. Also assesses their contribution to theology and the life of the Church and examines critical evaluations. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 328. Doctrinal Themes in Contemporary Protestant Systematic Theology 3 sem. hrs.

Analysis and evaluation of important contemporary Protestant systematic theologians in terms of a single theme or related set of themes to be chosen by the instructor. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 329. Doctrinal Themes in Contemporary Roman Catholic Systematic Theology 3 sem. hrs.

Analysis and evaluation of important contemporary Roman Catholic systematic theologians in terms of a single theme or related set of themes to be chosen by the instructor. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 333. Theological Method: Interdisciplinary Implications 3 sem. hrs.

Exploration of methodological interrelations between theology and other academic disciplines in terms of a single theme or related set of themes to be chosen by the instructor. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 343. Moral Theology: The Catholic Tradition 3 sem. hrs.

General outlines of the development and exposition of Catholic moral theology through an examination of historical studies of Christian Ethics written in the 20th century and of selected original texts. Moral teaching in early Christianity; development of systems of moral teaching; the history of casuistry; moral theology as a separate theological discipline; the understanding of the love commandment as found in different periods. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 344. The Protestant Tradition in Christian Ethics 3 sem. hrs.

Study of selected writings of the Reformers on ethical subjects and of selected ethical writings from important Protestant schools of theology. Representatives of sectarian Protestant thought on ethical topics. Contemporary developments in Christian ethics found in the writings of outstanding Protestant thinkers in this century. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 345. Conscience, Responsibility, and Freedom 3 sem. hrs.

Analysis of conscience, responsibility, and freedom as foundational categories for Christian ethics. Survey of classical theological discussions of human freedom and their relation to modern treatments of responsibility in the Christian life. Freedom and its exercise in the community. Conscience, freedom, and human sinfulness. The forms of Christian moral education. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 346. Authority, Law, Community, and Church 3 sem. hrs.

Survey of classical and contemporary treatments of the function of law and authority in providing moral guidance for the Christian community. The relation between law and love. The teaching authority of the Church in morals. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 347. Basic Issues in Christian Social Ethics 3 sem. hrs.

Social teaching of the Christian churches. A systematic treatment of issues such as the relation between love and justice. The teachings of the Christian churches on matters such as war and peace; the rights and duties of states and citizens; the rights, duties, and obligations of members of a family; the rights, duties, and obligations of parents with respect to their children. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 381. Special Questions in Old Testament Studies 3 sem. hrs.

Specialized research on topics or problems within and/or related to the Old Testament writings. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 382. Special Questions in New Testament Studies 3 sem. hrs.

Specialized research on topics or problems within and/or related to the New Testament writings. Greek text used. Offered occasionally. *Prereq: THEO 201 and cons. of dept. ch.*

THEO 383. Special Questions in the History of Christian Thought 3 sem. hrs.

Specialized research in one area or problem in the history of Christian thought. Specific topic(s) announced. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 384. Special Questions in Systematic Theology 3 sem. hrs.

Specialized research in one area or problem in systematic theology. Specific topic(s) announced. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 385. Special Questions in Moral Theology 3 sem. hrs.

Specialized research in one area or problem in moral theology. Specific topic(s) announced. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 388. Special Questions in Interdisciplinary Studies 3 sem. hrs.

Specialized research in one area or problem in interdisciplinary studies. Specific topic(s) announced. Offered occasionally. *Prereq: Cons. of dept. ch.*

THEO 390. Teaching Theology at the College Level 1 sem. hr.

Explores effective means of teaching religious knowledge in the liberal arts setting and addresses teaching models and learning styles, design of lesson plans, syllabi, conducting student discussions, and testing methods. Provides opportunities to practice classroom techniques and receive student evaluation. Offered every fall term. S/U grade assessment. *Prereq: Cons. of dept. ch. Students with M.A. may enroll in the course after completing one year of graduate course work. Students without M.A. may enroll in the course after two years of graduate course work.*

THEO 398. Special Topics in Liturgy and Spirituality 3 sem. hrs.

A graduate level course in selected areas of biblical, historical, or systematic theology offered at St. Francis Seminary. *Prereq: Cons. of dept. ch. May be taken for credit by students enrolled in degree programs in the Theology Department at Marquette University. No more than two 398 courses may be included in the required minimum course work in M.A. or Ph.D. programs.*

THEO 399. Doctoral Dissertation

3, 6, 9, 12 sem. hrs.
Offered every term. *Prereq: Cons. of dept. ch.*

THEO 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.

Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

THEO 892. Continuous Enrollment — Half-Time 0 sem. hrs.

Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

THEO 893. Continuous Enrollment — Full-Time 0 sem. hrs.

Fee. S/U grade assessment.
Prereq: Cons. of dept. ch.

TRANSFUSION MEDICINE (TRME)

Director and Adjunct Associate Professor:

Johnson

Adjunct Professor: Aster

Adjunct Associate Professor: Friedman, Gottschall, Puca

Adjunct Assistant Professor: LeMense, Sauer
Note: Faculty members and their ranks are for the 2005–2006 academic year.

DEGREE OFFERED

Master of Science in Transfusion Medicine, students are admitted under Plan A (thesis option) but Plan B (non-thesis option) is also offered

SPECIALIZATIONS

Business Administration, Education, Science

PROGRAM DESCRIPTION

The Transfusion Medicine program is an ongoing collaboration between Marquette University and the BloodCenter of Wisconsin. The first 18 credits must be completed at the BloodCenter within two years of starting the program. An additional 15-15.5 credits are completed exclusively at Marquette University. Students have the option to enroll at Marquette if it does not interfere with course work at the BloodCenter.

APPLICATION REQUIREMENTS

Applicants must submit, directly to the Graduate School:

1. A completed application form and fee.
2. Official transcripts from all current and previous colleges/universities except Marquette.
3. Three letters of recommendation.
4. (For international applicants only) GRE scores.

5. (*For international applicants only*) a TOEFL score or other acceptable proof of English proficiency.

Note: Applicants must currently be enrolled in the BloodCenter's independent course of study, the Specialist in Blood Banking program, in order to be eligible to apply for the master of science program in transfusion medicine at Marquette University.

MASTER'S REQUIREMENTS

A student in the transfusion medicine program must complete a minimum of 39 credit hours of graduate-level course work: 18 credit hours in transfusion medicine (TRME) courses, 16 credit hours in the business administration subspecialty OR 15 credits in the education or science subspecialties, and six credit hours of thesis work. When the 18 credits are completed at the BloodCenter, the student is required to take a national examination. Upon passing this examination, the usual requirement to take a master's comprehensive examination will be waived.

CORE COURSES

TRME students are required to take eight core courses and fulfill the requirements for one of the three subspecialties.

- TRME 201 Immunohematology
TRME 202 Infectious Disease in Transfusion Medicine
TRME 203 Pathophysiology and Transfusion Therapy
TRME 204 Clinical Investigation: Transfusion Medicine 1
TRME 205 Clinical Investigation: Transfusion Medicine 2
TRME 206 Topics in Management and Education
TRME 297 Department Colloquium
TRME 299 Master's Thesis

SUBSPECIALTY REQUIREMENTS

Students should attempt to secure co-direction on their thesis from a member of their subspecialty faculty. Under certain conditions, a student may take an additional six credit hours of course work and write an essay instead of a thesis.

1. BUSINESS ADMINISTRATION

Students are required to take three core courses, three electives, and must meet all prerequisite requirements for the master of business administration classes. Students must also select an area of specialization from the following: organizational management, operations and supply chain management, accounting and finance, marketing or management information systems. Those students who have academic backgrounds sufficient to waive any of the required courses will be allowed to complete additional elective course work.

Required Courses (7 credits)

The required courses insure a fundamental understanding of the basics of accounting, human resources, and organizational issues in the work place. In addition, the environmental influences course places a strong emphasis on Marquette's traditional focus on societal concerns and the social responsibilities of today's working professional.

- BUAD 201 Economics Foundations
BUAD 202 Accounting Foundations

- BUAD 260 Ethical Issues, Regulatory Environment and Human Resource Management

Elective Courses (9 credits)

At least three courses must be completed within a student's area of specialization from the classes listed below. Note required and elective lists within each area.

Organizational Management

Required Course (3 credits)

- BUAD 262 Organizational Behavior

Elective Course List (6 credits)

- BUAD 264 International Management
BUAD 266 Leadership, Motivation, and Organizational Change
BUAD 267 Understanding Entrepreneurship
BUAD 268 Topics in Human Resource Management
BUAD 269 Seminar in Organizational Management

Operations and Supply Chain Management

Required Course (3 credits)

- BUAD 220 Operations and Supply Chain Management

Elective Course List (6 credits)

- BUAD 222 Service Operations Management
BUAD 223 Quality and Process Management
BUAD 229 Seminar in Operations and Supply Chain Management

Accounting and Finance

Required Courses (6 credits)

- BUAD 230 Managerial Accounting
BUAD 250 Financial Management

Elective Course List (3 credits)

- BUAD 239 Seminar in Accounting
BUAD 251 Investments
BUAD 252 Cases in Financial Policy
BUAD 253 Fixed Income Markets and Securities
BUAD 254 Security Analysis and Asset Valuation

- BUAD 255 Financial Derivatives
BUAD 256 Bank Management
BUAD 257 Financial Markets
BUAD 258 International Financial Management
BUAD 259 Seminar in Finance

Marketing

Required Course (3 credits)

- BUAD 240 Marketing Management

Elective Course List (6 credits)

- BUAD 241 Consumer Behavior
BUAD 242 Global Marketing Strategy
BUAD 243 Advanced Multivariate Data Analysis
BUAD 244 Direct Marketing & e-Commerce
BUAD 245 Strategic Marketing
BUAD 246 Customer Relationship Management
BUAD 247 Marketing and Public Policy
BUAD 249 Seminar in Marketing

Management Information Systems

Required Course (3 credits)

- BUAD 270 Information Technology Strategy

Elective Course List (6 credits)

- BUAD 272 Decision Support Systems
BUAD 273 Telecommunications
BUAD 274 Database Management
BUAD 279 Seminar in Information Technology

2. EDUCATION

Students in this subspecialty are required to take three core courses and two electives.

Those students who have academic backgrounds sufficient to waive any of the required courses will be allowed to complete additional elective course work.

Required Courses (9 credits)

- EDPL 234 Foundations of Curriculum
EDPL 237 Theories of Learning Applied to Instruction
EDPS 261 Introduction to Research Methods

Elective Courses (6 credits)

Educational Policy and Leadership

- EDPL 238 Seminar: Analysis of Teaching
EDPL 240 Supervision of Instruction
EDPL 294 Seminar on Topics in Educational Policy and Leadership

Educational Psychology

- EDPS 362 Educational Psychology of Motivation

Educational Research

- EDPS 321 Intermediate Research and Statistics
EDPS 322 Measurement and Evaluation

3. SCIENTIFIC RESEARCH

Students in this subspecialty are required to take three core courses and two electives.

Those students who have academic backgrounds sufficient to waive any of the required courses will be allowed to complete additional elective course work.

Required Courses (9 credits)

- BIOL 185 Immunobiology (taken for graduate credit)
BIOL 211 Structure and Function of Proteins
BIOL 212 Biochemistry and Function of Nucleic Acids

Elective Courses (6 credits)

Biology

- BIOL 137 Experimental Cell Biology (taken for graduate credit)
BIOL 201 Radioisotope Safety
BIOL 213 Signaling, Structure, and Motility of Eukaryotic Cells
BIOL 214 Protein Trafficking and Cellular Homeostasis
BIOL 232 Bacterial Physiology
BIOL 235 Microbiology in the Environment
BIOL 244 Developmental Genetics and Epigenetics
BIOL 255 Eukaryotic Genetics and Chromosome Structure
BIOL 263 Cell and Molecular Biology of Early Development
BIOL 275 Advanced Physiology
BIOL 281 Systems Physiology
BIOL 320 Special Topics in Cell and Developmental Biology
BIOL 323 Special Topics in Biochemistry and Genetics
BIOL 380 Special Topics in Physiology

Chemistry

- CHEM 246 Physical Methods of Analysis
CHEM 252 Analytical Separations
CHEM 255 Spectrochemical Methods of Analysis

COURSE DESCRIPTIONS

GRADUATE COURSES:

TRME 201. Immunohematology 4 sem. hrs.
The principles of genetics, biochemistry, and immunology are investigated and applied to blood group serology. Human blood group systems and their relationships to transfusion therapy and disease epidemiology are studied. In addition, the histocompatibility antigens and nomenclature are discussed in relationship to transfusion and transplantation. Offered annually. *Prereq: Cons. of dept. ch. and cons. of prog. dir.*

TRME 202. Infectious Disease in Transfusion Medicine 1 sem. hr.
The study of the biologic and physical manifestations of infectious disease as they correlate with the underlying abnormalities and physiologic disturbances. Emphasis will be placed on infectious blood disease identification as well as the FDA, AABB, and CLIA regulation policies and procedures. Offered annually. *Prereq: Cons. of dept. ch. and cons. of prog. dir.*

TRME 203. Pathophysiology and Transfusion Therapy 4 sem. hrs.
An advanced course in the pathological mechanisms underlying the production of human disease involving anemias, leukemias, and hemostasis. Transfusion therapy discussions include the proper use of blood products detailing the correct preparation of blood components and the calculation of doses and mechanisms by which the components correct clinical abnormalities. Bone marrow collection and transplantation procedures are analyzed. Offered annually. *Prereq: Cons. of dept. ch. and cons. of prog. dir.*

TRME 204. Clinical Investigation: Transfusion Medicine 1 3 sem. hrs.
A comprehensive investigation into the theoretical basis involving the selection process of donors for blood and bone marrow. A thorough understanding of the physiological aspects of blood and bone marrow collection will be gained. Emphasis will be placed on the therapeutic indications and counterindications of transfusion practice. Offered annually. *Prereq: Cons. of dept. ch. and cons. of prog. dir.*

TRME 205. Clinical Investigation: Transfusion Medicine 2 3 sem. hrs.
A study of the procedures performed as well as a complete understanding of disease process as it relates to serological detection. An in-depth look at the immune system as it relates to transplantation and transfusion medicine. A formal study of the aspects of histocompatibility, red cell serology, platelet immunity, hemostasis, and DNA diagnostics. Offered annually. *Prereq: Cons. of dept. ch. and cons. of prog. dir.*

TRME 206. Topics in Management and Education 3 sem. hrs.
A systematic approach in acquiring the fundamentals and principles of planning and implementing an educational program in the clinical setting. Also, preparation of the transfusion medicine practitioner to manage operational and fiscal affairs in a collection facility or transfusion service. Quality management and quality improvement processes will be evaluated. Offered annually. *Prereq: Cons. of dept. ch. and cons. of prog. dir.*

TRME 295. Independent Study 1-3 sem. hrs.
Offered every term. *Prereq: Cons. of dept. ch. and cons. of prog. dir.*

TRME 297. Department Colloquium 0 sem. hrs.
Scholarly reports on selected topics in transfusion medicine/immunohematology by graduate students. Offered annually. S/U grade assessment. *Prereq: Cons. of dept. ch. and cons. of prog. dir. Attendance required of all full-time students.*

TRME 298. Special Topics in Transfusion Medicine 1-3 sem. hrs.
In-depth study of concepts, theories, and laboratory techniques in the broad area of transfusion medicine which are not covered in regular courses. Offered every term. *Prereq: Cons. of dept. ch. and cons. of prog. dir.*

TRME 299. Master's Thesis 1-6 sem. hrs.
Master's thesis for M.S. candidates. Offered every term. *Prereq: Cons. of dept. ch. and cons. of prog. dir.*

TRME 891. Continuous Enrollment — Less than Half-Time 0 sem. hrs.
Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.*

TRME 892. Continuous Enrollment — Half-Time 0 sem. hrs.
Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.*

TRME 893. Continuous Enrollment — Full-Time 0 sem. hrs.
Fee. S/U grade assessment. *Prereq: Cons. of dept. ch.*

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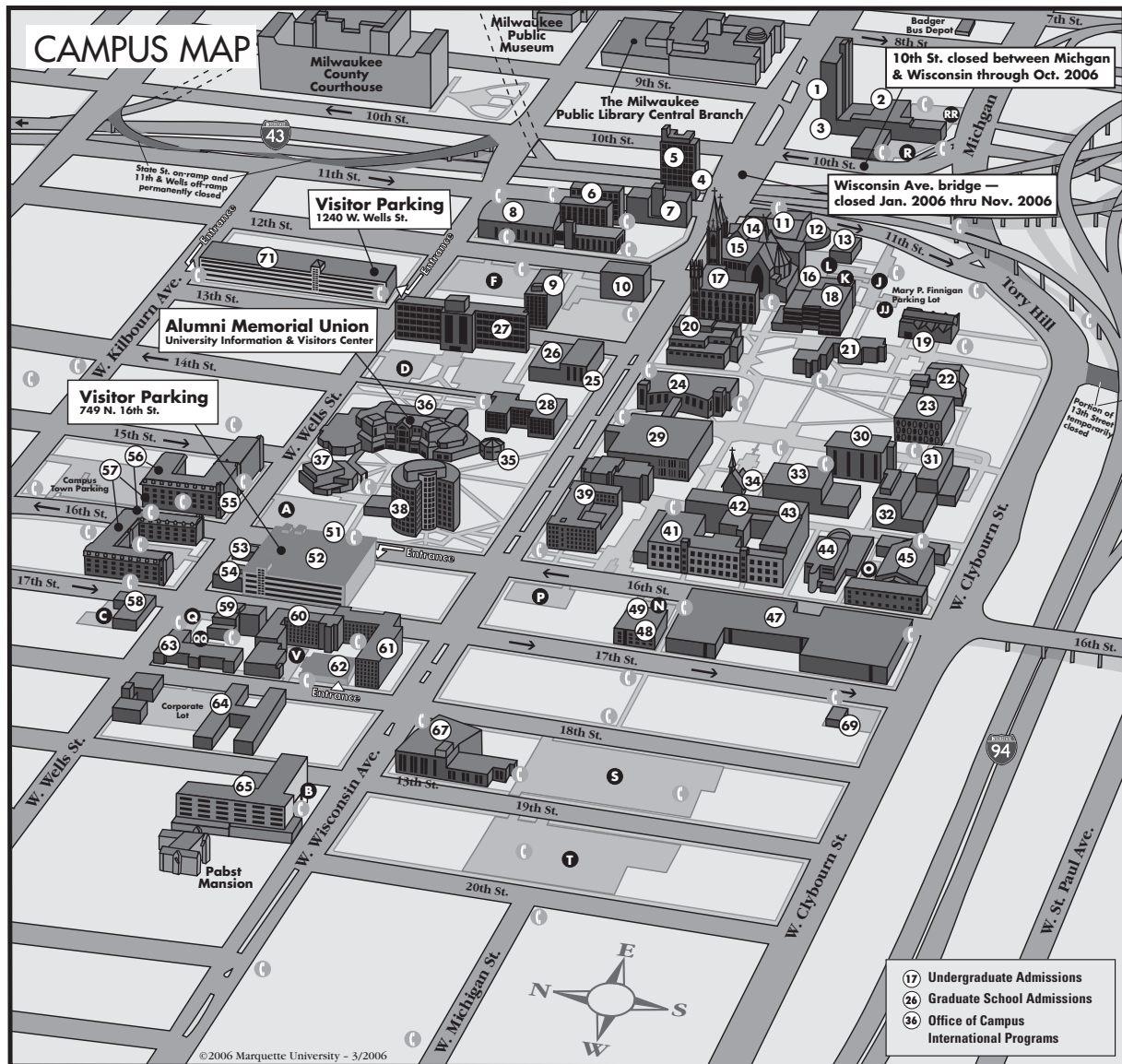
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*Academic/Administrative Buildings*

- 7 707 Building
- 10 1212 Building, College of Professional Studies
- 58 1700 Building
- 60 Academic Support Facility
- 49 Carmel Hall East
- 4 M. Carpenter Tower
- 44 Emory T. Clark Hall, College of Nursing
- 21 Charles L. Coughlin Hall
- 20 Katharine Reed Cudahy Hall
- 67 School of Dentistry
- 39 Patrick E. Haggerty Hall, College of Engineering, & Olin Engineering Center
- 63 Helfaer Building
- 26 Holthusen Hall, Graduate School
- 28 Jesuit Residence
- 14 Robert A. Johnston Hall, Diederich College of Communication
- 59 Krueger Parent & Child Center
- 23 Lalumiere Language Hall
- 17 Marquette Hall, Klingler College of Arts and Sciences
- 13 O'Hara Hall
- 51 Public Safety
- 41 Harriet Barker Cramer Hall
- 42 Walter Schroeder Health Sciences & Education Complex, College of Health Sciences, School of Education

- 11 Sensenbrenner Hall, Law School

- 31 Service Building
- 69 Service Garage
- 18 David A. Straz, Jr., Hall, College of Business Administration
- 3 David A. Straz, Jr., Tower
- 43 Student Health Service
- 30 Todd Wehr Chemistry
- 32 Wehr Life Sciences
- 33 William Wehr Physics

Churches/Chapels

- 35 The Chapel of The Holy Family
- 15 Gesu Church, a Jesuit-sponsored parish
- 16 Gesu Parish Center
- 34 St. Joan of Arc Chapel

Libraries

- 12 Law Library/Legal Research Center
- 29 Memorial Library
- 24 John P. Raynor, S.J., Library

Parking Structures

- 52 Parking Structure 1
- 62 Parking Structure 3
- 71 Wells Street Parking Structure

Art/Entertainment/Recreation Facilities

- 36 Alumni Memorial Union, University Information & Visitors Center
- 57 Campus Town
- 45 Gymnasium
- 19 Patrick & Beatrice Haggerty Museum of Art
- 47 Helfaer Tennis Stadium & Recreation Center
- 22 Evan P. & Marion Helfaer Theatre
- 8 Al McGuire Center
- 2 Rec Plex
- 55 Union Sports Annex
- Valley Fields (not shown)
- 25 Varsity Theatre
- 37 Tony & Lucille Weasler Auditorium

Residence Halls

- 9 Abbottsford Hall
- 5 M. Carpenter Tower
- 6 Cobeen Hall
- 65 Mashuda Hall
- 38 McCormick Hall
- 64 O'Donnell Hall
- 27 Schroeder Hall
- 1 Straz Tower

University Apartment Buildings

- 56 Campus Town Apartments
- 48 Carmel Apartments
- 53 Frenn Building
- 54 Gilman Building
- 61 Humphrey Hall

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