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This is the Introduction, General Information, and Majors and Degrees Table from the 2001-2003 Graduate School Catalog for the University of Minnesota, Twin Cities campus.
Introduction

Graduate School Location

The Graduate School’s main administrative offices are on the East Bank of the University of Minnesota’s Twin Cities campus in Johnston Hall, 101 Pleasant Street S.E., Minneapolis, MN 55455. See Campus Maps at the end of this catalog. Johnston Hall is wheelchair accessible.

Publications

Graduate School Catalog—Prospective and current graduate students are responsible for all the information contained in this catalog that is pertinent to graduate study and their specific field.

The first section, General Information, is the official source of information about Graduate School policies and procedures. The next section, Majors and Degrees, lists approximately 150 degree programs offered through the Graduate School.

The largest sections, Degree Programs and Faculty, and Courses, list contact names and addresses for the degree programs (Program Offices), faculty who teach in each discipline (Graduate Faculty) and present requirements and course descriptions for the various programs offering graduate degrees. The short section that follows is Duluth Degree Programs.

At the back is a complete set of Campus Maps and Course Designators. The inside back cover, Course Numbers and Symbols, explains the numbering system, punctuation, department designators, and symbols used throughout the course descriptions.

The catalog is available in the Graduate School (309 Johnston Hall) and on the Internet at <www.catalogs.umn.edu/grad/index.html>.

Updates to Catalog Information—Changes in Graduate School policies and procedures relating to admission, registration, financial assistance, and commencement are accessible on the Internet at <www.grad.umn.edu>

Other Publications—The Class Schedule lists courses, class hours, locations, instructors, and basic course regulations. It is available in campus bookstores before registration each term. Separate catalogs are printed for the College of Continuing Education, the Duluth campus, and other University units.

Policies

Catalog Use—The information in this catalog and other University catalogs, publications, or announcements is subject to change without notice. University offices can provide current information about possible changes.

This publication is available in alternative formats on request. Contact the Office of Admissions, University of Minnesota, 240 Williamson Hall, 231 Pillsbury Drive S.E., Minneapolis, MN 55455 (612-625-2008; e-mail admissions@umn.edu).

Equal Opportunity—The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

In adhering to this policy, the University abides by the Minnesota Human Rights Act, Minnesota Statute Ch. 363; by the Federal Civil Rights Act, 42 U.S.C. 2000e; by the requirements of Title IX of the Education Amendments of 1972; by Sections 503 and 504 of the Rehabilitation Act of 1973; by the Americans With Disabilities Act of 1990; by Executive Order 11246, as amended; by 38 U.S.C. 2012; the Vietnam Era Veterans Readjustment Assistance Act of 1972, as amended; and by other applicable statutes and regulations relating to equality of opportunity.

The Office of Equal Opportunity and Affirmative Action helps students and employees with concerns about possible discrimination, and provides consultations regarding nepotism and consensual relationships. Staff members can discuss issues, help resolve or investigate complaints, and provide training programs. Inquiries regarding compliance may be directed to Julie Sweitzer, Director, Office of Equal Opportunity and Affirmative Action, University of Minnesota, 419 Morrill Hall. 100 Church Street S.E., Minneapolis, MN 55455 (612-624-9547).

Disability Services—The University’s mission is to provide optimal educational opportunities for all students. The University recognizes that students with disabilities sometimes have unique needs that must be met for them to have access to campus programs and facilities. In general, University policy calls for accommodations to be made on an individualized and flexible basis. It is the responsibility of students to seek assistance at the University and make their needs known.

The first place to seek assistance is Disability Services (DS). This office promotes program and physical access, which means ensuring the rights of students with disabilities and assisting the University in meeting its obligations under federal and state laws. DS provides direct assistance such as information, referral, support, and academic accommodations for enrolled and prospective students, as well as consultation to faculty and staff to ensure access to their programs and facilities. The office also assists students with disabilities in obtaining services from other University or community resources and serves as a liaison between the University and the Division of Rehabilitation Services. Campus accessibility maps also are available from DS; building accessibility information is printed in the Student-Staff Directory and Class Schedule. For more information, contact Disability Services, University of Minnesota, 180 McNamara Alumni Center/University Gateway, 200 Oak Street S.E., Minneapolis, MN 55455 (612-626-1333 voice or TTY).
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Students have the right to review their educational records. The regents’ policy, including a directory of student records, is available for review at 200 Fraser Hall, Minneapolis and at records offices on other campuses of the University. Questions may be directed to the Office of the Registrar, 200 Fraser Hall (612-625-5333).

Immunization—Students born after 1956 who take more than one University course are required under Minnesota law to submit a Student Immunization Record form.

The form, which is sent along with the official Graduate School admission letter, should be filled out and returned to Boynton Health Service as soon as possible, but absolutely no later than 45 days after the beginning of the first term of enrollment, in order for students to continue registering for courses at the University. Complete instructions accompany the form.

Smoke-Free Campus Policy—Smoking is prohibited in all facilities of the University of Minnesota, Twin Cities campus except for designated private residence hall rooms.

The Campus and Community

On the Twin Cities campus, Graduate School students enjoy the vast academic and cultural opportunities of a major university and a unique metropolitan area.

Two Campuses in One—The Twin Cities campus, the largest and oldest in the University system, is technically two separate campuses: one just east of downtown Minneapolis on the Mississippi River, the other just west of the State Fairgrounds a couple of miles from downtown St. Paul.

The Mississippi River divides the Minneapolis campus into two banks connected by the double-decker Washington Avenue Bridge. The picturesque mall of the main East Bank is bordered by stately traditional buildings—including Johnston Hall, home of the Graduate School. Next door is Northrop Auditorium and its plaza. On the other end of the mall, Coffman Memorial Union offers a good place to relax between classes. Nearby are unique underground facilities and the health sciences complexes.

Just across the river is the West Bank. Newer and smaller, it boasts sleek brick buildings like the main library, the Humphrey Institute of Public Affairs, the Law Center, the Ted Mann Concert Hall, and the Carlson School of Management.

Three miles away is the St. Paul campus, whose animal barns, croplands, flowers, and wooded areas evoke a small college atmosphere.

Urban Diversity—The Dinkytown, Stadium Village, Seven Corners, and Cedar-Riverside areas near the Minneapolis campus, and the St. Anthony Park neighborhood alongside the St. Paul campus, all feature shops and restaurants tailored to students’ interests and budgets.

Minneapolis (the largest city in Minnesota) and St. Paul (the state capital) are both flourishing centers of commerce and industry, where grandiose historic buildings complement bold new skyscrapers. Focal points of a progressive metropolitan area of 2.3 million people, the two downtowns offer many opportunities for entertainment, research, volunteer or part-time work, internships, and careers.

Arts and Entertainment—The Twin Cities are renowned for their imaginative and varied cultural attractions, such as the Guthrie Theater, Orway Music Theater, Orchesta Hall, Science Museum and Omnitheater, and Brave New Workshop. Northrop Auditorium, the campus centerpiece, hosts performances by popular musical and dance artists and outstanding University bands and ensembles. Students can see or star in plays at the Rarig Center. Or they can enjoy the Walker Art Center and the Minneapolis Institute of Arts, the Minnesota and Como Zoos, the Mall of America, the Renaissance Festival and Valleyfair, and the Minneapolis Aquatennial and St. Paul Winter Carnival. Overlooking the Mississippi River is the University’s Frederick R. Weisman Art Museum, with award-winning design by Frank Gehry.

Recreation and Sports—The Recreational Sports program, one of the largest of its kind on any campus in the country, offers curling, cycling, racquetball, crew, ballroom dance, juggling, and 100 other teams, clubs, and fitness activities. Sports fans can view Golden Gophers or Vikings football and Twins baseball at the Metrodome, Timberwolves basketball at the Target Center and Wild hockey at the Xcel Energy Center. Many women’s and men’s intercollegiate athletic events also take place right on campus.

Outdoor enthusiasts can explore the Twin Cities’ 150 parks and 200 lakes, ideal for picnicking, hiking, biking, swimming, canoeing, sailing, fishing, rollerblading or ice skating, cross-country or downhill skiing, or simply sitting and thinking. The Boundary Waters Canoe Area Wilderness, one of the most unspoiled wilderness treasures in the entire nation, is only a few hours drive north.

The warmth of spring, greenery of summer, and bright colors of autumn are followed by at least three months of winter snow, but even then, daytime temperatures generally average an invigorating 10 to 30 degrees above zero.

University Counseling & Consulting Services

University Counseling & Consulting Services (UCCS), 109 Eddy Hall on the East Bank and 199 Coffey Hall on the St. Paul campus (612-624-3323 for both), offers counseling for academic, career, personal, or relationship concerns. Besides counseling, UCCS features a variety of services. The Career Development Center and the Learning and Academic Skills Center offer workshops, courses, and materials for career development or academic skills improvement. UCCS offers a series of workshops for graduate students as well as ongoing dissertation support groups. The Organizational Development Program offers consultation, assessment, team building, conflict mediation, training, and workshops. UCCS’s Office of Measurement Services (OMS) scores exams, surveys, and research instruments and provides consultation to University faculty and staff. The Testing Center administers computerized national tests. For more information, see <www.ucs.umn.edu>.
Libraries and Research Opportunities

The University of Minnesota, Twin Cities Libraries, with a collection of more than 5.7 million catalogued volumes and over 45,000 serials, ranks 17th in size among American universities. Included in the system are the Bio-Medical Library (health sciences); Magrath Library (agriculture, biological sciences, human ecology); Science and Engineering Library (in Norris Gymnasium through 2001 and Walter Library beginning early 2002); and Wilson Library (social sciences, humanities, education, psychology, special collections). Other campus libraries include those for architecture, entomology, fisheries and wildlife, forestry, horticulture, journalism, law, mathematics, music, plant pathology, and veterinary medicine. Many specialized libraries and archives, such as the Children’s Literature Research Collections and the Immigration History Research Center, are located in the Elmer L. Andersen Library. In addition to strong comprehensive research collections, the system offers a full range of reference and information services, including specialized reference assistance, interlibrary loan service, database literature searching, and library user instruction. LUMINA, the library’s online system, may be accessed from residence halls, offices, and other locations at <www.lib.umn.edu>.

Research support is provided by the Office of the Vice President for Research and Dean of the Graduate School as well as by the public and private sectors. The Graduate School distributes a total of $6 million annually in competitive fellowship awards to students. Another $6 million annually is awarded competitively to faculty for research support and endowed professorship support. The University also ranks among the top research universities receiving federal research money.

Use of Human or Animal Subjects in Research

All research on the Twin Cities, Duluth, Morris, and Crookston campuses that involves the use of human or animal subjects must be reviewed and approved before initiation by the Institutional Review Board: Human Subjects Committee (IRB) or the Institutional Animal Care and Use Committee (IACUC). This policy, approved by the University Senate and Board of Regents, applies to funded and nonfunded faculty, staff, and student research. All research, including Plan B projects, theses, and dissertations, that involves human or animal subjects must be approved by the appropriate committee to ensure that the rights and welfare of the subjects are protected. For more information, contact the Research Subjects Protection Office, University of Minnesota, MMC 820, 420 Delaware Street S.E., Minneapolis, MN 55455 (612-626-5654; fax 612-626-6061).

University Research Centers

Addiction Studies, Center for
Advanced Control in Plasma Processing, Center for
Aging, Center on
Agricultural Experiment Station
Alternative Plant and Animal Products, Center for
Applied Research and Educational Improvement, Center for (CAREI)
Archaeology Laboratory
Arney High Performance Computing Research Center
Austrian Studies, Center for
Avian Research Center
Biological Process Technology, Institute for Advanced Studies in
Biomedical Engineering Center
Bioethics, Center for
Biometric Research, Coordinating Centers for (CCBR)
Cedar Creek Natural History Area
Cellular Injury Laboratory Center
Cereal Rust Laboratory
Chemical Toxicology Research Center
Child and Family Health Promotion and Research, Center for
Child Welfare, Center for Advanced Studies in
Clinical Outcomes Research Center (CORC)
Clinical Research Center
Cloquet Forestry Center
Cognitive Neuroscience and Brain Imaging Program
Cold Climate Housing Program
Community and Regional Research, Center for
Community Genetics, Center for
Community Integration, Institute on
Computational Science and Engineering, Laboratory for
Conflict and Change Center
Control Science and Dynamical Systems Center
Cooperative Learning Center
Corrections Education Research, Center on
Corrosion Center
CPCRA (Community Program for Clinical Research on AIDS)
Statistical Center
Criminal Justice Institute
Dairy Foods Research Center
Daylighting Center, Regional
Death Education and Research, Center for
Dental Research Center for Biomaterials and Biomechanics, Minnesota
Dental Research Institute
Design Center for the American Urban Landscape
Development of Microsensor Technology, Center for the
Early Childhood Research Institute
Early Education and Development, Center for
Early Modern History, Center for
Economic Development Center (Twin Cities)
Economic Development (Duluth), Center for
Economic Education (Twin Cities), Center for
Economic Research, Center for
Education in Agriculture and Extension, Center for
Educational Outcomes, National Center on
Entrepreneurial Studies, Carlson Center for
Epilepsy Clinical Research Program
European Studies, Center for
Experiential Education and Service Learning, Center for
Excellence in Critical Care, Center for
Feminist Studies, Center for Advanced
Food Animal Biotechnology Center
Gay, Bisexual, Transgender Studies, (Steven J.) Schochet Center for
Gene Therapy of Fibrotic Lung Disease, Center for
Geological Survey, Minnesota
Geometry Center, The
Girls and Women in Sport, Center for Research on
Hardwood Ecology, Center for
Herbarium
History of Information Processing, (Charles) Babbage Institute-
Center for the
Holocaust and Genocide Studies, Center for
Home Monitoring of Patient Status, Center for
Hormel Institute
Horticultural Research Center
Human Factors Research Laboratory
Human Genetics, Institute of
Human Resource Development Research Center
Humanities Institute
Imaging Center
Immigration History Research Center
Immunology, Center for
Industrial Relations Center
Integrated Natural Resources and Agricultural Management, Center for
Archaeometry Laboratory
Army High Performance Computing Research Center
Austrian Studies, Center for
Avian Research Center
Biological Process Technology, Institute for Advanced Studies in
Biomedical Engineering Center
Bioethics, Center for
Biometric Research, Coordinating Centers for (CCBR)
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Community Integration, Institute on
Computational Science and Engineering, Laboratory for
Conflict and Change Center
Control Science and Dynamical Systems Center
Cooperative Learning Center
Corrections Education Research, Center on
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CPCRA (Community Program for Clinical Research on AIDS)
Statistical Center
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Dairy Foods Research Center
Daylighting Center, Regional
Death Education and Research, Center for
Dental Research Center for Biomaterials and Biomechanics, Minnesota
Dental Research Institute
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Epilepsy Clinical Research Program
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Herbarium
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Holocaust and Genocide Studies, Center for
Home Monitoring of Patient Status, Center for
Hormel Institute
Horticultural Research Center
Human Factors Research Laboratory
Human Genetics, Institute of
Human Resource Development Research Center
Humanities Institute
Imaging Center
Immigration History Research Center
Immunology, Center for
Industrial Relations Center
Integrated Natural Resources and Agricultural Management, Center for

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Distinguished McKnight University Professorship Winners for 2001

Once a year, the Graduate School selects four University professors to receive the Distinguished McKnight University Professorship. Winners are chosen on the merit of their scholarly achievements and the potential for greater attainment in the field; the extent to which their achievements have brought distinction to the University of Minnesota; the quality of their teaching and advising; and their contributions to the wider community.

The four recipients for 2001 are:

Lydia Artymiw
Music

R. Lawrence Edwards
Geology and Geophysics

Timothy P. Lodge
Chemistry

Lawrence P. Wackett
Biochemistry, Molecular Biology, and Biophysics

Interdisciplinary Applications in Magnetic Resonance, Center for
Interdisciplinary Studies of Writing, Center for
Interest Measurement Research, Center for
Interfacial Engineering, Center for
International Food and Agricultural Policy, Center for
International Studies, Royal D. Alworth Jr. Institute for
International Studies and Programs, Institute of
Interpersonal Relationships, Center for Research on
Jewish Studies Center
Journalism Center, Minnesota
Lake Itasca Forestry and Biological Station
Landscape Arboretum, Minnesota
Landscape Studies Center
Language Acquisition, Center for Advanced Research on (CARLA)
Large Lakes Observatory
Learning, Perception, and Cognition, Center for Research in
Life Course Center
Limnological Research Center
lMrNology: A Virtual Center for Limnology
Long-Term Care Administration, Center for
Low-Vision Research, Minnesota Laboratory for
Lung Health Study Coordinating Center
Magnetic Resonance Research, Center for
Management Information Systems Research Center
Manufacturing, Design, & Control, Center for Advanced
(CAMDAC)
Mathematics and Its Applications, Institute for
Medieval Studies, Center for
Metals in Biocatalysis, Center for
Microbial Genomics, Center for
Microbial Physiology and Metabolic Engineering, Center for
Micromagnetics and Information Technologies Center (MINT)
Microtechnology Laboratory (MTL)
Midwest Ecological Risk Assessment Center (MERAC)
Minnesota Population Research Institute
Molecular and Cellular Therapy, Center for
Muscle and Muscle Disorders, Center for
NanoStructure Laboratory
Natural Resource Policy and Management, Center for
Natural Resources Research Institute
Neurocommunication Research, Edwin Eddy Center for
Neuroscientific Databases, Center for
North Central Soil Conservation Research Laboratory
Nuclear Physics, Williams Laboratory for
Nursing Research on Elders, Center for
Occupational Health and Safety, Midwest Center for
Pain Research, Center for
Pharmaceutical Research in Management and Economics (PRIME) Institute
Philosophy of Science, Minnesota Center for
Plant Molecular Genetics Institute
Plants and Human Health, Center for
Political Economy, Center for
Polymerization and Polymer Process Engineering Center
Population Analysis and Policy, Center for
Psychiatry Research
Race and Poverty, Institute on
Raptor Center
Research on Developmental Education and Urban Literacy, Center for
Research on Girls and Women in Sport, Center for
Reflective Leadership Center
Refugee Studies Center
Residential Services and Community Living, Center for
Restorative Justice and Mediation, Center for
Retail Food Industry Center, The (TRFIC)
Rock Magnetism, Institute for
Rural Health Research Center
Rural Sociology and Community Analysis, Center for
St. Anthony Falls Laboratory
Sand Plain Research Farm
Sea Grant College Program, Minnesota
Silha Center
Social, Economic and Ecological Sustainability, Institute for
(SISEES)
Space Grant Consortium, Minnesota
Speech, Equality, and Harm, Center for
Strategic Management Research Center
Study of Political Psychology, Center for the
Study of Neurobehavioral Development in the Context of Adversity, Center for the
Supercomputer Institute
Superconductivity, Center for Science and Application of
Survey Research, Minnesota Center for
Sustainable Agriculture, Minnesota Institute for (MISA)
Technological Leadership, Center for Development of
Theoretical Physics Institute
Transportation Studies, Center for
Twin and Adoption Research, Minnesota Center for
Underground Research Site, Soudan
Urban and Regional Affairs, Center for
Violence and Abuse, Higher Education Center Against (HECACA)
Violence Prevention and Control, Center for
Vocational Education, Minnesota Research and Development Center for
Vocational Education, National Center for Research in
Water Resources Research Center
Women and Public Policy, Center on
Youth Development, Center for

Administration

University Regents
Maureen K. Reed, Stillwater, Chair
Robert S. Bergland, Roseau, Vice Chair
Anthony R. Baraga, Side Lake
Dallas Bohmsack, New Prague
William E. Hogan II, Minnetonka
Waren C. Larson, Bagley
David R. Metzen, Sunfish Lake
H. Bryan Neel III, Rochester
Michael O’Keefe, Minneapolis
Jessica J. Phillips, Minneapolis
Patricia B. Spence, Rice

University Administrators
Mark G. Yudof, President
Robert Bruninks, Executive Vice President and Provost
Frank B. Cerra, Senior Vice President, Health Sciences
Tonya Moten Brown, Vice President and Chief of Staff
Carol Carrier, Vice President for Human Resources
Sandra Gardebring, Vice President for University Relations
Robert J. Jones, Interim Vice President for Student Development
Eric Kruse, Vice President for University Services
Christine M. Mazzar, Vice President for Research and Dean of the Graduate School
Charles Muscoapt, Vice President for Agricultural Policy
Mark B. Rotenberg, General Counsel

Graduate School Administrators
Christine M. Mazzar, Ph.D., Vice President for Research and Dean of the Graduate School
Victor A. Bloomfield, Ph.D., Vice Provost for Research and Associate Dean of the Graduate School
Esam El-Fakahany, Ph.D., Assistant Vice President for Research and Associate Dean of the Graduate School
Shirley Nelson Garner, Ph.D., Associate Dean of the Graduate School
George D. Green, Ph.D., Associate Dean of the Graduate School
Stephen C. Hedman, Ph.D. Associate Dean of the Graduate School, Duluth
Samuel L. Moore, Ph.D., Assistant Dean of the Graduate School
Naomi R. Scheman, Ph.D., Associate Dean of the Graduate School
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The Graduate School provides advanced training in a variety of fields and promotes research in an atmosphere of freedom of inquiry.

The Graduate School administrative structure includes six policy and review councils, consisting of faculty and students, in the areas of biological sciences; education and psychology; health sciences; language, literature, and the arts; physical sciences; and social sciences. These councils, together with an Executive Committee, are responsible for making general policy for the Graduate School. The Executive Committee is composed of the Graduate School dean; chairpersons of the policy and review councils, the Graduate School Research Advisory Committee, and the Fellowship Committee; and representatives from the Duluth Graduate Faculty Committee, Graduate School administration and staff, and the Council of Graduate Students.

Tuition and Fees

Tuition for the various categories of Graduate School registration and fees are listed in the Class Schedule, published each term, and can be found on the Web at <http://onestop.umn.edu/Finances/tuition_and_fees.html>. Summer session tuition and fees are listed in the Summer Session Catalog.

Residence—Because the University is a state institution, Minnesota residents pay lower tuition than nonresidents. To qualify for resident status, students must reside in Minnesota for at least one calendar year before the first day of class attendance. For more information, contact the Resident Classification and Reciprocity Office, University of Minnesota, 240 Williamson Hall, 231 Pillsbury Drive S.E., Minneapolis, MN 55455 (612-625-6330).

Reciprocity—For residents of North Dakota, South Dakota, Wisconsin, or Manitoba who qualify for reciprocity privileges, tuition rates are lower than for nonresidents and are, in some cases, comparable to resident rates. For more information, contact the Resident Classification and Reciprocity Office (see above).

Resident Tuition Benefit—For information on resident tuition for graduate assistants, fellows, and trainees, see Assistantships and Fellowships on page 10. For information on the benefit for underrepresented and educationally disadvantaged students, see Office of Graduate School Outreach on page 12.

Basic Admission Requirements

Any student with a U.S. bachelor’s degree or a comparable foreign degree from a recognized college or university may apply to the Graduate School dean for admission. Applicants with the necessary background for their chosen major field, an excellent scholastic record from an approved college or university, and appropriate professional qualifications may be admitted for graduate work on recommendation of the graduate faculty in the proposed major field and approval of the Graduate School dean. The Graduate School operational standard for admission is an undergraduate grade point average (GPA) of 3.00. Many programs require a higher GPA. Applicants should consult the program to which they are applying for more specific information about admission standards.

For more information on admission requirements and application procedures, contact the proposed major field at the address or phone number listed with each program in the Degree Program and Faculty section of this catalog.

Application Procedure

Requests for application materials should be sent to the director of graduate studies in the individual program (see the contact information listed with each program in the Degree Programs and Faculty section). Requests must specify the applicant’s proposed major field and emphasis, degree objective, and date of entry. Applicants may also apply online at <www.grad.umn.edu/application.html>.

Applicants are encouraged to apply for admission well in advance of the term in which they wish to enter the Graduate School (but no more than one year in advance of the proposed entry date). The Graduate School application, complete with all required materials, must be submitted by the following deadlines.

- Fall semester—June 15
- Spring semester—October 15
- Summer session—March 15

Deadlines that fall on a holiday or weekend will be extended through the next regular workday.

Many major fields have established deadlines earlier than those listed above and also require additional application and supporting materials. It is the applicant’s responsibility to obtain information about those deadlines and requirements from the director of graduate studies for the proposed major.

Note: More detailed and up-to-date information regarding the application fee, transcripts, and test data is included in the instructions accompanying the Graduate School Application for Admission.

Transcripts—Official transcripts of previous academic study must be submitted.

Experience at the University of Minnesota has been that often during the course of the program of study a student has need of a complete set of official credentials covering previous college and university training. Applicants are urged to request two sets of official credentials when preparing their admission application—one to be submitted for permanent filing in the Graduate School and the other for personal use.

International Applicants—All international applicants must submit complete credentials. Details on the types of transcripts required are given in the Graduate School Application for Admission instructions.

Test Data—One or more of the following tests may be required as part of the application process (in addition, consult the individual program requirements under Degree Programs and Faculty):

- Graduate Record Examination (GRE)—Most major fields request the GRE. It would be wise, therefore, for applicants to complete this test either in the senior year of undergraduate work or before filing an admission application.

The Graduate School requires GRE General Test results from all applicants who submit undergraduate narrative transcripts or transcripts containing “pass-no credit (P-N),” “credit,” or other ungraded notations for a
substantial number of courses taken during the junior and senior years or whose transcripts do not show a substantial number of letter grades during those years.

For information about the test, contact the Educational Testing Service, CN 6000, Princeton, NJ 08541. Official scores must be sent to the Graduate School office from the testing service.

Graduate Management Admission Test (GMAT)—See the business administration program description under Degree Programs and Faculty. For information on registering for the GMAT, write to the Educational Testing Service, CN 6108, Princeton, NJ 08541.

Test of English as a Foreign Language (TOEFL) and Michigan English Language Assessment Battery (MELAB)—The operational standard for admission to the Graduate School is a TOEFL score of 550 (213 on the computer-based test) or MELAB score of 80; individual programs may require a higher score. One of these tests is required of all international applicants whose native language is not English, except those who will have completed 24 quarter or 16 semester credits (within the past 24 months) in residence as a full-time student at a recognized institution of higher learning in the United States before entering the University of Minnesota. These transfer students, however, may be asked to take locally administered English tests after arrival on campus.

Foreign Medical Graduate Examination in the Medical Sciences (FMGEMS)—Applicants seeking admission to graduate study in clinical medical fields whose medical degrees or qualifications were conferred by medical schools outside the United States, Puerto Rico, or Canada must submit certification by the Educational Commission for Foreign Medical Graduates or evidence of a full and unrestricted license to practice medicine issued by a state or other territory under U. S. jurisdiction that is authorized to license physicians. For more information on certification and the FMGEMS, write to the Educational Commission for Foreign Medical Graduates, 3624 Market Street, Philadelphia, PA 19104, USA or phone 215-386-5900.

Additional Information—The Graduate School and individual programs within it reserve the right to request additional information when they believe it is necessary.

Special Applicant Categories

University of Minnesota Undergraduates—University of Minnesota students who have no more than seven semester credits or two courses to complete for their bachelor’s degree (including both distribution and total credit requirements), if they are admitted, may register in the Graduate School to begin a graduate program while simultaneously completing their baccalaureate work. A final bachelor’s transcript must be submitted before the second term of registration.

Professional Development—Applicants who wish to enroll in a field in the Graduate School but are not interested in a graduate degree may apply for admission for “professional development coursework.” Applicants for professional development courses must complete the usual application materials and meet existing deadlines and admission standards. Because some major fields restrict admission to those planning on pursuing an advanced degree, applicants are advised to consult with the director of graduate studies in their proposed major field before completing application materials.

Academic Staff—University of Minnesota staff holding academic appointments above the rank of instructor or research fellow are normally not permitted to complete a graduate degree at the University. Those who wish to register for courses and transfer them elsewhere may apply for admission for “professional development coursework.”

Committee on Institutional Cooperation Traveling Scholar Program—The University of Minnesota participates in the Traveling Scholar Program for graduate students enrolled in Committee on Institutional Cooperation (CIC) institutions. The 14 participating universities are the members of the “Big Ten,” the University of Chicago, the University of Illinois at Chicago, and the University of Wisconsin-Milwaukee.

The program enables doctoral students at any CIC university to take advantage of educational opportunities—specialized courses, unique library collections, unusual laboratories—at any other CIC university without change in registration or increase in fees. Students may take advantage of these educational opportunities for three quarters or two semesters.

Graduate students interested in graduate course offerings not available at the University of Minnesota should confer first with their major department and major adviser concerning which of the cooperating institutions to select for program enrichment and diversification. Information on procedures for participating in the Traveling Scholar Program is available in the Graduate School Admissions Office, 309 Johnston Hall (612-625-9364).

Assistantships and Fellowships

Resolution of the Council of Graduate Schools in the United States—Acceptance of an offer of financial aid (such as a graduate scholarship, fellowship, traineeship, or assistantship) for the next academic year by an enrolled or prospective 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, the student may submit a written resignation for 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 was made. Similarly, an offer made by an institution after April 15 is conditional on presentation by the student of a written release from any previously accepted offer. It is further agreed by the institutions and organizations subscribing to this resolution that a copy of the resolution should accompany every scholarship, fellowship, traineeship, and assistantship offer.

Graduate Assistantships—Graduate assistantships are academic appointments reserved for graduate and professional students. Appointments to teaching assistant, research assistant, or administrative fellow positions are offered through various departments. A teaching assistant helps teach students in a specified course or courses under the general supervision of the academic staff and may be assigned primary responsibility for an entire course. A research assistant carries out activities connected with research studies assigned by the supporting department or principal research investigator. An administrative fellow performs duties of a specialized nature connected with academic administration.
General Information

To be eligible to hold one of these appointments, a student must have been admitted to the Graduate School or a professional school and be registered in the Graduate School or professional school at the term of the appointment; this applies to appointments of any percentage or any number of hours. For more specific information, refer to the Graduate Assistant Employment Area in the Office of Human Resources (612-624-7070) or its Web site <www.umn.edu/ohr/cao>. 

Benefits—All graduate assistants holding appointments as teaching assistants, research assistants, and administrative fellows may become eligible for the following benefits:

Tuition Benefits—Upon reaching minimum qualification for eligibility (refer to the graduate assistant office Web site above), students receive a tuition benefit equal to twice the percentage of time worked. For example, a 40 percent appointment for the full payroll semester period includes an 80 percent tuition benefit, which applies only to tuition costs. The maximum benefit is 100 percent and applies to a maximum of 14 credits each academic term. The tuition benefit does not cover course or student services fees.

Resident Rate Privilege—Upon reaching minimum qualification for eligibility (refer to the graduate assistant office Web site above), students receive a resident rate break, which is credited on the fee statement before the tuition benefit. This privilege applies concurrently to members of the immediate family (spouse or domestic partner, children, and parents).

Extended Resident Rate Privilege—When a graduate assistant has completed two qualifying terms of assistantship, the resident rate break continues for the number of terms the appointments were held, up to a maximum of six terms. This privilege applies also to the student’s immediate family. Note: For the student and family, this privilege does not extend beyond three years from the termination of the last or most recent qualifying appointment.

Each department sets its own financial aid application deadline. Unless otherwise noted, students should apply by January 15 for appointments for the ensuing academic year; applications received after January 15 are considered for available vacancies.

Graduate assistants are compensated according to a pay range established each year by the University’s central administration and approved by the Board of Regents. The current pay range for graduate assistants is available from the department or the University of Minnesota Job Center. Graduate students may not hold appointments for which there is no monetary compensation, nor are they allowed to hold appointments for which they receive only course credit or resident tuition rates.

More information may be obtained from either the head of the department offering the appointment or the Job Center, which maintains the graduate assistant office Web site and Grapevine, a newsletter for graduate assistants. More information about the assistantship program at the University may be obtained from the Job Center, University of Minnesota, 200 Donhowe Building (first floor for walk-in assistance), 319 15th Avenue S.E., Minneapolis, MN 55455 (612-624-7070; fax 612-625-9801; e-mail gradins@bhs.umn.edu; <www.bhs.umn.edu>).

Graduate Assistant Health Care Plan—University-subsidized health insurance is available to most graduate students or professional school students who hold an appointment as a teaching assistant, research assistant, or administrative fellow (some other fellows and trainees enrolled in the Graduate School are also eligible). For these students, the University pays 50 to 100 percent of the insurance premium during the academic year (fall through spring), the percentage depending on the level of appointment. To receive this coverage, eligible students must apply for it by the end of the second week of classes. To apply and for more information, contact the Graduate Assistant Insurance Office, N-323 Boynton Health Service, 410 Church Street S.E., Minneapolis, MN 55455 (612-625-6936; e-mail gradins@bhs.umn.edu; <www.bhs.umn.edu>).

General College Assistantships—Graduate students are eligible to apply for teaching assistantships in General College in mathematics, natural sciences, social sciences, writing, ESL, oral communication, and the humanities. The General College program consists of developmental and general education courses that enable underprepared students to later transfer to degree-granting colleges. Approximately 35 percent of the students in the college are from Asian/Pacific-American, African-American, Native American, and Hispanic ethnic groups.

All graduate teaching assistantships for General College are posted for at least five days in the Job Center, University of Minnesota, 319 15th Avenue S.E., Minneapolis, MN 55455. Notices of vacancies in General College are routinely sent to related academic departments in other University colleges.

Graduate Fellowships—Graduate fellowships, awards based on academic merit, are available to new and currently enrolled graduate students. The Graduate School Fellowship Office, 321 Johnston Hall, administers several fellowship programs: a number of individual academic departments also administer field-specific fellowships. Entering students should contact their prospective graduate program. Currently enrolled students should consult the Fellowship Office and their graduate program office for current information on fellowship opportunities. The Fellowship Office also processes applications for several international competitions, such as Fulbright Grants for graduate study abroad.

Resident Benefits for Graduate Fellows and Trainees—Graduate students who hold fellowships or traineeships are eligible for resident tuition rates, provided the award is administered by the University and the stipend is at least equal to a 25-percent-time graduate assistantship. This eligibility also extends to members of the immediate family (i.e., parent, spouse, child, or ward). Any changes to this policy will appear in the Class Schedule.

For New Graduate Students

GRADUATE SCHOOL FELLOWSHIPS—Intended for recruiting outstanding new students to the University’s graduate programs, these fellowships provide approximately $13,500 for the academic year plus tuition for up to 14 credits per term and subsidized health insurance. Prospective students must be nominated by their chosen major field in early February through procedures announced by the Graduate School during fall semester. Applicants should contact the director of graduate studies in their major field in advance.

FELLOWSHIPS AND SCHOLARSHIPS ADMINISTERED THROUGH DEPARTMENTS—Many academic departments have fellowships and awards from private endowment income, gifts, and other sources. Complete information is available on award amounts and purposes, deadlines, and the application process from individual departments. Students should inquire directly.
FELLOWSHIPS AVAILABLE FOR UNDERREPRESENTED AND EDUCATIONALLY DISADVANTAGED STUDENTS—Because eligibility varies depending on the fellowship, students should contact the appropriate program office to see if they are eligible. Information can also be obtained from the Office of Graduate School Outreach, 333 Johnston Hall (612-625-6858; e-mail gsoeo@umn.edu).

Diversity of Views and Experiences Fellowship (DOVE)—Students planning to enter the Graduate School for the first time in the fall semester are eligible for these one-year fellowships, which provide a stipend of approximately $13,500 plus tuition and health insurance (fees not included) for the academic year. Departmental support following the fellowship year is included. All applicants must be nominated by the graduate program they plan to enter. About 10 fellowships are awarded by the Graduate School each year.

Other Available Fellowships—The availability of other fellowships for underrepresented and educationally disadvantaged students changes yearly. They include the Ford Foundation Predoctoral and Dissertation Fellowships for Minorities, the GEM Master’s Fellowship, the GEM Ph.D. Engineering and Natural Science Fellowship, the MacArthur Scholars Fellowship, the National Physical Science Consortium Fellowships for Minorities and Women in the Physical Sciences, and others. Contact the Office of Graduate School Outreach, 333 Johnston Hall, for information. In addition, underrepresented and educationally disadvantaged students should check all regular sources of support described in this catalog.

Other Financial Assistance

Student Employment—The University’s Job Center (part of the Office of Human Resources) offers graduate students a wide range of nonacademic employment opportunities both on campus and throughout the Twin Cities area. All jobs are posted at the Job Center, 200 Donhowe Building, 319 15th Avenue S.E., Minneapolis, MN 55455 (612-625-2000). Contact the Job Center for more information, including registration requirements for graduate student eligibility.

In addition to University (on-campus) employment, the Center offers programs for off-campus employment: the Job Location and Development (JLD) Program helps locate career-related opportunities with private and public employers in the Twin Cities; Community Service Programs helps arrange employment on and off campus with nonprofit organizations and agencies.

Students who prefer more flexibility may apply for short-term, on-campus temporary positions through the Student Temporary Service (STS). STS also offers free microcomputer training and temporary job placement through the Microcomputer Training Program. Training is provided on Macintosh and IBM microcomputers. Once qualified, students are placed in temporary, on-campus microcomputer-related jobs at competitive wages.

Office of Student Finance (OSF)—To apply for financial aid, graduate students must complete the Free Application for Federal Student Aid (FAFSA), available from the financial aid office each year. Graduate students are considered for the following programs, according to their degree program, student status, and other qualifying criteria: Ford Federal Direct Subsidized and Unsubsidized Loans; Federal Perkins Loans; Student Educational Loan Fund (SELF); University Trust Fund Loan (UTFL); University of Minnesota scholarships and fellowships; regular student employment and Work-Study; Health and Human Services Health Care Professions Grants; Minnesota Medical Foundation Scholarship; Minnesota Tuition Offset for Health Professions; Peters Pharmacy Scholarship; University of Minnesota Medical School Scholarships; Health Professions Student Loan (HPSL); Loans for Disadvantaged Students (LDS) for health professions; Nursing Student Loan (NSL); Primary Care Loan (PCL) for medical students; and private loans.

International graduate students must contact International Student and Scholar Services for financial aid opportunities (see next page).

Most awards are based on financial need and full-time enrollment status. Aid from the UTFL, Perkins, and Work-Study programs is awarded as applications become complete and until all funds have been spent. Students who submit their FAFSAs early to the federal processor receive first priority consideration for limited funds. Prospective students may apply before admission to the University.

For detailed information, students should obtain the most recent edition of the Scholarships and Financial Aid Handbook, a comprehensive guide to the financial aid process at the University of Minnesota. The handbook is accompanied by the FAFSA, which must be completed for aid consideration. Students may write to the Office of Student Finance at either University of Minnesota, 210 Fraser Hall, 106 Pleasant Street S.E., Minneapolis, MN 55455, or University of Minnesota, 130 Coffey Hall, 1420 Eckles Avenue, St. Paul, MN 55108, or call 612-624-1665 or, July-September, 1-800-400-UofM(8636); the fax number is 612-624-9584 and...
the e-mail address is osfa@umn.edu. To receive disability accommodations when in Fraser Hall or information in an alternative format, call the disability services liaison for financial aid at 612-625-9578; TTY telephone is 612-626-0701.

International Students and Scholars—International Students and Scholars Services (ISSS) provides counseling, advising, educational and career services to students and scholars from other countries. ISSS staff members offer counseling and advising services regarding visa requirements and other immigration issues; social, personal, and financial matters; international and intercultural educational opportunities; academic issues; and English language requirements.

International students new to the University of Minnesota must participate in ISSS’s International Student Orientation Program, which introduces students to academic, social, and practical matters relevant to their study in the United States. In addition, ISSS coordinates many cross-cultural training programs and events for students, faculty, staff, and the Twin Cities communities. All admitted international students and scholars are mailed materials pertaining to pre-arrival, arrival, and transition to the University system. Prospective student inquiries may be addressed to International Student and Scholar Services, 190 Hubert H. Humphrey Center, 301 19th Ave. S., Minneapolis, MN 55455 (612-626-7100) or visit the Web site <www.umn.edu>.

Army and Air Force ROTC—Graduate students may pursue a two-year Army or Air Force ROTC program. For information, see the University’s Undergraduate Catalog for the Twin Cities campus or call the Army ROTC (612-624-7300) or Air Force ROTC (612-624-2884).

Student Grievance Procedures

Academic Grievances—An all-University Student Academic Grievance Policy exists to resolve “complaints brought by students regarding the University’s provision of education and academic services affecting their role as students.” Copies of the policy and information about its implementation are available from the Grievance Office, 658 Heller Hall, Twin Cities campus (612-624-1030).

Sexual Harassment—Policies pertaining to sexual harassment are contained in the Regent’s policy adopted December 11, 1998. The policy defines sexual harassment in the following manner.

“Sexual harassment means unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature when: (1) submission to such conduct is made either explicitly or implicitly a term or condition of an individual’s employment or academic advancement in any University activity or program; (2) submission to or rejection of such conduct by an individual is used as the basis of employment or academic decisions affecting this individual in any University activity or program; or (3) such conduct has the purpose or effect of unreasonably interfering with an individual’s work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program.”

Individuals seeking information and guidance in matters involving sexual harassment should contact the Office of Equal Opportunity and Affirmative Action, 419 Morrill Hall (612-624-9547).


Housing

At the current time, the University guarantees housing fall term to freshmen that apply before May 1. Graduate and professional students can be housed in residence halls/apartments usually during the spring term and will have an option of renewing for the following year. Students interested in living in a residence hall on campus or off-campus housing in Minneapolis or St. Paul should contact Housing & Residential Life, Comstock Hall-East, 210 Delaware Street S.E., Minneapolis, MN 55455 (612-624-2994; fax 612-624-6987; e-mail housing@umn.edu). Listings of apartments, duplexes, houses, sleeping rooms, shared units, and sublets are maintained in the office as well as on the Web. Information on temporary housing, living costs, transportation, and day-care centers in the Twin Cities area is also available.

For more information, visit the Housing & Residential Life Web site at <www.umn.edu/housing>. For information on University family housing, contact Commonwealth Terrace Cooperative, 1250 Fifield Avenue, St. Paul, MN 55108 (651-646-7526), or Como Student Community, 1024 27th Avenue S.E., Minneapolis, MN 55414 (612-378-2434).

Orientation to the Twin Cities Campus

Designed for all incoming new graduate students in fall and spring semesters, Graduate Student Orientation (GSO) offers a wide variety of informational sessions and workshops to assist student transition into the University of Minnesota system. Sessions include “How to Navigate the U” and “The Nuts and Bolts of Graduate School” as well as basic resources such as “How to get your Student I.D.” All incoming graduate students (except those with foreign addresses) are mailed a brochure outlining the GSO schedule for that semester; F1 and J1 visa students receive information from International Student and Scholar Services (612-626-7100). For more information, contact New Student Programs at 612-624-1979 or 800-234-1979 or visit their Web site at <www.nsps.umn.edu>.
General Information

In addition to this University-wide orientation service, many graduate programs may offer orientation sessions specifically for their respective fields. For more information, students should contact the director of graduate studies in their major field.

Council of Graduate Students

The Council of Graduate Students (COGS) is the official governing body representing graduate students at the University. COGS provides opportunities for graduate students to participate actively in University and Graduate School administrative and policy decisions. Graduate students in each degree-granting and free-standing minor program are entitled to elect one representative to serve on COGS. COGS also recruits student representatives for the Graduate School Policy and Review Councils, the University Senate, and many College of Liberal Arts and University-wide committees. In addition, COGS assists in providing ombuds services for graduate students and disseminates information, primarily through the Gradletter, the EXTRA! (graduate student listerv), and through general meetings held throughout the academic year. Information on University governance and grievance procedures is available from the COGS office.

Students may contact COGS at University of Minnesota, 405 Johnston Hall, 101 Pleasant Street S.E., Minneapolis, MN 55455 (612-626-1612; e-mail cogs@umn.edu; <www.cogs.umn.edu>).

Preparing Future Faculty

Preparing Future Faculty (PFF) welcomes graduate and postdoctoral participants from all disciplines. PFF helps participants acquire information about the teaching and learning process and the faculty role at a variety of institutions of higher education; gain a realistic perspective on the skills required for success as a faculty member; examine their fit with a teaching career in higher education; work with a faculty mentor in a teaching opportunity at a local college or university; demonstrate, document, and reflect on their teaching skills; and market themselves for faculty or other professional positions.

To receive a letter of recognition and certificate of program participation from the Graduate School, participants must complete Grad 8101—Teaching in Higher Education and Grad 8102—Practicum for Future Faculty. Other credit courses on teaching and learning or the faculty role may be recognized by PFF as substitutes for Grad 8101 or Grad 8102.

PFF is a program of the Graduate School, administered through the Center for Teaching and Learning Services (CTLS) in the Office of Human Resources. For information on program enrollment, contact PFF at 612-625-3811 or pf@umn.edu, drop by CTLS in 120 Fraser Hall, or visit <www.umn.edu/chr/pff>.

Registration

Registration Deadlines—All graduate students must register before the term-specific, University-wide registration deadline. For University calendar and registration deadline information and the University-wide policy governing cancel/adds, refer to the Class Schedule or <www.onestop.umn.edu/schedule/html/tc.html>. For information about the summer term, including, registration deadlines, refer to the Summer Session Catalog or the Class Schedule Web site above. Exceptions to University-wide registration deadlines will be considered only by written request to the Graduate School; such requests are not routinely granted.

All graduate students must register before the first day of the term to avoid a late registration fee.

Registration Requirements—Most graduate students are enrolled full time every semester. In addition, the following requirements apply as appropriate.

1. To maintain their active status, graduate students must at minimum register once per year (e.g., students registered for fall semester in any given year must register again for fall semester of the next year at the latest). Those who do not register in the Graduate School at least once per year are considered to have withdrawn: their Graduate School records are deactivated. Deactivated students may not register for courses, take examinations, submit degree program or thesis proposal forms, file for graduation, or otherwise participate in the University community as Graduate School students. Those who wish to resume graduate work must request readmission to the Graduate School and, if readmitted, must register in the Graduate School for the term of readmission to regain their active status.

For further information about the Graduate School’s registration requirement, including examples, refer to <www.grad.umn.edu/gss/registration.html>.

Graduate students who have registered within the past year need not register for the sole purpose of taking final written or oral examinations for the master’s degree or specialist certificate, or preliminary written, or final oral examinations for the doctorate.

2. Graduate students holding appointments as teaching assistants, research assistants, or administrative fellows must be registered each term of their appointment; this applies to appointments of any percentage or any number of hours. See Graduate Assistantships under Assistantships and Fellowships on page 10 for more information.

3. Students receiving other types of financial aid from the University or other agencies, international students with certain types of visas, and students who wish to use various University services and facilities may have specific registration requirements; these students are responsible for obtaining information about such requirements from the appropriate offices.

Special Registration Categories for Advanced Graduate Students

Advanced master’s students and advanced doctoral candidates (i.e., students who have completed all their program coursework and required thesis credits, but still are working full-time on the research or writing of their thesis, papers, capstone project, or dissertation) may be eligible for special registration categories that enable them to be certified as “full-time” students when registered for one credit.
“Full-time with one credit registration” courses are available only to advanced master’s (8333) and doctoral (8444) students. Eligibility criteria are specific to advanced master’s and advanced doctoral applicants. Students must meet eligibility criteria and application deadlines to qualify.

For further information concerning eligibility requirements, deadlines, and application forms, contact the Graduate School, 316 Johnston Hall, the Graduate Assistantship Office, or <www.grad.umn.edu/gsss/>.

### Readmission and Other Changes

Requests for readmission, change of major, track or degree objective, or change of campus within the Graduate School should be made on the Change of Status/Readmission application (G.S. Form 72), available from the Graduate School Admissions Office, 309 Johnston Hall. Payment of a $40 fee must accompany the form.

**Readmission**—To maintain their active status, graduate students must at minimum register once every year. Previously registered students who do not register in the Graduate School of the University of Minnesota at least once per year will be considered to have withdrawn and must apply for readmission in order to resume graduate work. More detailed information and specific examples are located at <www.grad.umn.edu/gsss/registration.html>.

**Change of Major, Track, or Degree Objective**—Students currently enrolled in the Graduate School who intend to change their major, track, or degree objective from that originally approved by the Graduate School should request a change of status. Students who have already been awarded a degree in the Graduate School must request a change of status if they wish to pursue another degree.

**Change of Campus**—Students currently enrolled in the Graduate School on one campus who wish to complete their studies on another campus should request a change of status. Graduate study is currently available on the Twin Cities campus and on the Duluth campus.

### Grading System

The Graduate School uses two grading systems: A-B-C-D-F (with pluses and minuses) and S-N. Students have the option of choosing the system under which they will be graded, except in courses in which grading has been restricted to one system with approval of the Graduate School. Students choose their grading system at the time of initial registration. 5xxx and 8xxx courses with grades of A, B, C (including C-), and S may be applied to a Graduate School degree program. Under some circumstances and with approval of the student’s major field, 4xxx, 6xxx, and 7xxx courses may also be applied to a Graduate School degree. At least two-thirds of the total number of course credits included on any degree program form must be taken A-F. Individual major fields have the option of specifying more stringent requirements regarding the application of S-N courses to a degree program. All A-F registrations in the Graduate School, regardless of course level, will be calculated in the cumulative GPA.

### Incomplete Grades

The symbol “I” may be assigned by an instructor to indicate “incomplete,” in accordance with provisions announced in class at the beginning of the semester, when in the instructor’s opinion there is a reasonable expectation that the student can successfully complete the work of the course. An “I” remains on the transcript until the instructor replaces it with a final A-F or S-N grade. Course instructors may, at their discretion, establish a time limit for the removal of incomplete grades. The maximum number of credits of incompletes allowable at any given time is established by each major field for its graduate students. Students should refer to the Graduate School’s Web site <www.grad.umn.edu> for further information.

### Retaking Courses

The Graduate School discourages the retaking of courses to improve grades. If a course is retaken, all registrations and grades for the course remain on the student’s transcript and are calculated into the cumulative GPA.

### Grade Changes

To preserve the integrity of the graduate transcript as an accurate record of a student’s academic progress, the Graduate School does not approve requests to change final grades assigned to students in prior semesters.

### Satisfactory Progress Toward the Degree

In addition to fulfilling the Graduate School requirements, students should consult their major program’s graduate studies handbook for program-specific criteria for satisfactory progress toward their degree.

### Termination of Graduate Student Status

When performance is unsatisfactory in terms of grades or normal progress toward the student’s degree objective, graduate student status may be terminated. All guidelines stated in this catalog are minimum requirements, and each program is free to set more specific terms by which progress is measured for purposes of continuation. Students are encouraged to check with the director of graduate studies in their major field for complete information about academic performance and degree progress standards and the procedures used to monitor these standards.

Students who do not register in the Graduate School at least once per year are considered to have withdrawn; their Graduate School records are deactivated (see Registration Requirements on page 14).

### Postbaccalaureate Certificates

The Graduate School offers postbaccalaureate certificates that recognize graduate-level training beyond the award of the bachelor’s degree. Certificates may be coupled with a master’s or doctoral degree under special circumstances and with the approval of the graduate faculty in the degree-granting field. Postbaccalaureate certificates offered through the Graduate School require...
a minimum of 15 credits. Regular Graduate School application procedures and admission requirements apply. Refer to the list of "Majors and Degrees" for the fields in which postbaccalaureate certificates are offered. For specific program requirements, see Degree Programs and Faculty in this catalog.

**Master’s Degree**

The master’s degree is awarded in recognition of academic accomplishment as demonstrated by a coherent program of coursework, passing of the required examinations, and preparation of a thesis or project(s).

**Two Plans for the Master’s Degree**—The Graduate School offers the master’s degree under two plans: Plan A, requiring a thesis, and Plan B, which substitutes additional coursework and special projects for the thesis. For plans offered in each major, see Degree Programs and Faculty in this catalog.

**Registration Requirement for the Master’s Degree**—Master’s degree students are required by the Graduate School to complete at least 60 percent of the coursework for their official degree programs (excluding thesis credits) as registered University of Minnesota Graduate School students; individual major fields may require a higher percentage. With approval of the adviser, director of graduate studies in the major (and director of graduate studies in the minor, if the courses are for a designated minor), and Graduate School, transfer coursework may make up the remaining 40 percent (maximum) of the degree coursework (see Transfer of Credits for the Master’s Degree below).

Master’s Plan A students must enroll for a minimum of 10 thesis credits (8777) before receiving the degree.

**Double Counting**—Students may have a maximum of 8 credits in common between two master’s degrees.

**Transfer of Credits for the Master’s Degree**—Unless otherwise specified under a student’s major in Degree Programs and Faculty, the following rules apply to transfer of credits:

Master’s degree students are required by the Graduate School to complete at least 60 percent of the coursework for their official degree programs (excluding thesis credits) as registered University of Minnesota Graduate School students. With approval of the adviser, director of graduate studies in the major (and director of graduate studies in the minor, if the courses are for a designated minor), and Graduate School, the transfer of up to 40 percent of the degree program coursework from any combination of the following is permitted:

1. Other recognized graduate schools;
2. Adult special, summer session, and College of Continuing Education registrations at the University of Minnesota before spring semester 2001 (such registrations taken spring semester 2001 or after will not be accepted for transfer);
3. 99PRD registrations at the University of Minnesota;
4. Registrations through other University of Minnesota units (e.g., College of Education, Law School) in pursuit of graduate-level degrees that were not awarded.

In all cases, official transcripts of the work must be attached to the degree program form, unless they have already been included in the student’s Graduate School file.

Individual graduate programs have the option of specifying a lower percentage of coursework for transfer.

Work to be transferred must be graduate level (postbaccalaureate) and have been taught by faculty authorized to teach graduate courses. It is the student’s responsibility to provide appropriate course documentation (e.g., course syllabi, faculty status information) supporting proposed transfer credits to the program.

In the case of a transfer from a non-U.S. institution, the credits must have been earned in a program judged by the Graduate School to be comparable to a graduate degree program in a graduate school of a regionally accredited institution in the United States.

Regarding the transfer of coursework from either a U.S. or non-U.S. institution, if conditions are placed on a student’s admission to exclude certain coursework from transfer to a Graduate School degree program, that coursework may not be transferred regardless of the level of the coursework or the status of the school or college in which it was earned.

Credits are transferred by including the courses in the proposed degree program. Credits not accepted as part of a student’s degree program cannot be transferred to the Graduate School transcript.

Courses taken before the awarding of a baccalaureate degree cannot be transferred.

**Time Limit for Earning the Master’s Degree**—All requirements for the master’s degree must be completed and the degree awarded within seven years. The seven-year period begins with the earliest coursework included on the official degree program form, including any transfer work. The graduate faculty in a specific program may set more stringent time requirements.

Students who are unable to complete the degree within the seven-year limit may petition the Graduate School for an extension of up to one additional year. Extensions beyond one year are considered only in the most extraordinary circumstances. Contact the Graduate School, 316 Johnston Hall, concerning information to be included in such a petition. To ensure timely consideration, petitions should be filed early in the term in which the time limit expires.

If a petition is approved, the student is notified of the expectations for progress and completion of the degree. If the petition is denied, the student is terminated from the graduate program.

Students who have been terminated under such circumstances may apply for readmission to the Graduate School; readmission under these circumstances is not assured, however. The faculty in the major field and the Graduate School set any readmission conditions on the student’s resumption of work toward the degree, such as registering for additional coursework, retaking written examinations, completing the degree within a specified time period, or other appropriate terms.

**Official Program for the Degree**—By the time students have completed 10 credits, they must file with the Graduate School an official degree program. The degree program form is available from the Graduate School, 316 Johnston Hall or online at [www.grad.umn.edu/forms](http://www.grad.umn.edu/forms). Students list all coursework, completed and proposed, that will be offered in fulfillment of degree requirements, including transfer work (see Transfer of Credits for the Master’s Degree above). If a foreign language is required for the
degree, it also is specified on the degree program form. The members of a student’s final examining committee (who are the thesis reviewers for Plan A) are appointed by the dean of the Graduate School on recommendation of the faculty in the major field at the time the student’s official degree program is approved.

The minimum credit requirements for the program are specified under the Plan A and Plan B sections below.

A degree program approved by the Graduate School must be on file before reviewers report, examination, or graduation forms can be released to the student.

Changes in Approved Program—Once approved, the degree program must be fulfilled in every detail to meet graduation requirements. Program changes should be requested by completing a Graduate School petition form. The Graduate School petition form is available from the Graduate School, 316 Johnston Hall, or online at <www.grad.umn.edu/forms>.

Minimum Grade Requirements—The Graduate School requires a minimum GPA of 2.80 (on a 4.00 scale) for courses included on any official master’s degree program form. Courses with grades of A, B, C (including C-), and S may be included in the official degree program, but grades of S are not calculated in the GPA. Students pursuing a Plan A master’s degree are required to register for thesis credits (8777); these registrations are not graded and therefore cannot be used to meet course credit requirements. At least two-thirds of the course credits included on any degree program form must be taken A-F.

Individual major fields have the option of setting higher grade requirements and specifying more stringent requirements regarding the application of S-N courses to a degree program; students should be familiar with any special requirements in their major field.

Language Requirement—See Degree Programs and Faculty to determine the language requirement, if any, for a specific major field. The Graduate School monitors the fulfillment of language study when a major field requires a language. Information on how to demonstrate proficiency, and on conditions under which proficiency is recorded on the official transcript, is available from the Graduate School, 316 Johnston Hall, or online at <www.grad.umn.edu/forms>.

More Information—Students who have questions about the master’s degree after reading this entire section (including the following on Plan A and Plan B) may review online information at <www.grad.umn.edu/gsss> or contact the Graduate School by e-mail (gsmast@umn.edu). Note: Some commonly used forms are available on the Graduate School Web site at <www.grad.umn.edu/forms>.

Plan A: Master’s Degree With Thesis

Minimum Credit Requirements—Students must complete an approved program of coursework consisting of a minimum of 14 credits in the major field and a minimum of 6 credits in one or more related fields outside the major. All credits included on the official degree program form must be in graduate-level courses. A 2.80 minimum GPA must be maintained for all courses on the program form. Students must also register for a minimum of 10 master’s thesis credits (8777); these registrations are not graded and therefore cannot be used to meet course credit requirements.

Students who wish to complete a designated minor (which is certified on the transcript—unlike the related fields option, which is not) must complete 6 or more credits in a single field. A designated minor must be approved by the director of graduate studies in the minor field.

For majors in clinical branches, the minor or related fields must be in nonclinical fields that will serve as a basis for the proposed clinical specialization. This fundamental work should be taken early in the program. Familiarity with those phases of the nonclinical disciplines essential to proficiency in the major specialty is required.

Thesis Credits—Students must enroll for a minimum of 10 master’s thesis credits (8777) before receiving the degree. Students cannot include thesis credits in the total program credits when determining maximum transfer allowed (see Transfer of Credits for the Master’s Degree on page 16). They also cannot transfer thesis credits from other graduate institutions, double-count thesis credits between two master’s degrees, or use thesis credits to meet the minimum major and related field coursework requirements for the degree.

Master’s Thesis

Students must demonstrate familiarity with the tools of research or scholarship in their major field, the ability to work independently, and the ability to present the results of their investigation effectively, by completing a master’s thesis.

Language of the Thesis—Theses must normally be written in English or in the language of instruction. If a thesis is to be written in a foreign language, including a language of instruction other than English, a letter should be attached to the degree program form when it is submitted to the Graduate School. This letter should confirm that the recommended thesis reviewers (including the outside reviewer) are qualified to read, comprehend, and criticize a thesis in the foreign language.

Published Work Included in or in Lieu of the Thesis—The thesis may include materials that students have published while University of Minnesota graduate students, provided the research was carried out under the direction of the graduate faculty and approved by the adviser for incorporation into the thesis. Such publication is welcomed as the best demonstration of quality in a student’s research, and the Graduate School encourages the practice. The adviser should notify the Graduate School in writing of the intention to publish part of the thesis material, but the Graduate School’s approval is not required.

In cases where the thesis research is to be presented to the examining committee in the form of one or more articles that have been published, or are in a form suitable for publication, the student should contact the Graduate School, 316 Johnston Hall, for information on accommodating such a presentation to the required thesis format.

Thesis Reviewers—The thesis is read by the entire examining committee, which is appointed by the dean of the Graduate School on recommendation of the faculty in the major field at the time the student’s official degree program is approved. This examining committee consists of at least three members: two representatives from the major field and one from the minor or a related field. Committee members cannot represent more than one field simultaneously.
To permit faculty to allocate sufficient time to read the thesis and decide whether it is ready for defense, students must notify their adviser and other members of the final oral committee at least two weeks in advance that the thesis will be delivered on a particular date. All members of the examining committee must then have at least two weeks to read the thesis after it has been delivered. These are minimum standards; individual programs may establish other standards for their students.

The entire committee must be unanimous in certifying that the thesis is ready for defense, as indicated by their signatures on the thesis reviewers report form. The thesis reviewers report form, part of the graduation packet, is requested online at <www.grad.umn.edu/forms>. This form will be released only if the student has a degree prog Graduate School and has maintained active status (see Registration Requirements under Registration on page 14). When the signed form is returned to the Graduate School, 316 Johnston Hall, the student is provided with the final examination report form.

**Final Examinations**—Candidates for the master’s degree, Plan A, must pass a final oral examination; a final written examination may also be required at the discretion of the graduate faculty in the major field. If both a written and an oral examination are specified, the written examination must precede the oral examination. The final examinations cover the major field and the minor or related fields, and may include any work fundamental to these fields. The final oral for the master’s degree is conducted as a closed examination, attended by only the student and the examining committee.

Final examinations are coordinated by the chair of the student’s examining committee. All committee members must be present at the examination; the absence of any member results in an invalid examination. The results of the examinations are reported to the Graduate School on the final examination report form. A majority vote of the committee, all members present and voting, is required to pass the examination. A student who fails the examination may be terminated from the graduate program or may be allowed, on unanimous recommendation of the examining committee, to retake the examination, providing the reexamination is conducted by the original examining committee.

**Changes in the Examining Committee**—Substitutions on the examining committee may be necessitated by such circumstances as a faculty member’s temporary absence on leave from the University. The adviser or the director of graduate studies must request the Graduate School’s approval of such substitutions well in advance of the examination. Substitutions for an oral examination that are necessitated by emergency situations must also be approved in advance. In such cases, the adviser should consult with the Graduate School staff by telephone before the start of the examination.

**Preparation and Submission of the Thesis**—Two copies of the thesis must be submitted to the Graduate School. The student’s adviser(s) must sign both copies of the thesis to confirm that they are complete and satisfactory in all respects and that all revisions required by the final examining committee have been made. Instructions for the preparation of the thesis, including format specifications and adviser’s signature requirements, should be obtained from the Graduate School, 316 Johnston Hall, or online at <www.grad.umn.edu/forms>.

**Plan B: Master’s Degree Without Thesis**

**Minimum Credit Requirements**—Students must complete an approved program of coursework consisting of a minimum of 14 credits in the major field and a minimum of 6 credits in one or more related fields outside the major. The balance of credits to be completed to meet the 30-credit minimum requirement for the degree is chosen by agreement between the adviser and the student, subject to whatever restrictions the graduate faculty in the major field may place on that choice. All credits included in the official degree program must be in graduate-level courses. A 2.80 minimum GPA must be maintained for all courses included in the program.

Students who wish to complete a designated minor (which is certified on the transcript—unlike the related fields option, which is not) must complete 6 or more credits in a single field. A designated minor must be approved by the director of graduate studies in the minor field.

**Plan B Project(s)**—Students must demonstrate familiarity with the tools of research or scholarship in their major field, the ability to work independently, and the ability to present the results of their investigation effectively, by completing at least one Plan B project. The graduate faculty in each major field may require as many as three such projects.

The Plan B project(s) should involve a combined total of approximately 120 hours (the equivalent of three full-time weeks) of work. The graduate faculty in each major field specifies both the nature and extent of the options available to satisfy this requirement, and whether the requirement is to be satisfied in conjunction with or independent of the courses in the student’s program.

**Final Examinations**—The Graduate School requires a final examination for Plan B candidates; this may be written, oral, or both, at the discretion of the graduate faculty in the major field. The final examinations cover the major field and the minor or related fields, and may include any work fundamental to these fields. Students in each major field must pass the final examination. If a final oral is held, it is conducted as a closed examination, attended by only the student and the examining committee. All committee members must be present at the oral examination; the absence of any member results in an invalid examination.

A committee of at least three examiners is appointed by the dean of the Graduate School upon recommendation of the faculty in the major field at the time the official degree program is approved. This committee consists of two representatives from the major field and one from the minor or a related field. Committee members cannot represent more than one filed simultaneously. The examination is coordinated by the chair of the student’s examining committee. The results of the examination are reported on a form the student must obtain from the Graduate School, 316 Johnston Hall, or by requesting a graduation packet online at <www.grad.umn.edu/forms> before the examination is held. This form will be released only if the student has a degree program form approved by the Graduate School and has maintained active status (see Registration Requirements under Registration on page 14). A majority vote of the committee, all members present and voting, is required to pass the examination. A student who fails the examination may be terminated from the graduate program or may be allowed, on
unanimous recommendation of the examining committee, to retake the examination, providing the reexamination is conducted by the original examining committee.

Changes in the Examining Committee—Substitutions on the examining committee may be necessitated by such circumstances as a faculty member’s temporary absence on leave from the University. The adviser or the director of graduate studies must request the Graduate School’s approval of such substitutions well in advance of the examination. Substitutions for an oral examination that are necessitated by emergency situations must also be approved in advance. In such cases, the adviser should consult with the Graduate School staff by telephone before the start of the examination.

More Information—Students who have questions about the master’s degree may review online information at <www.grad.umn.edu/gess> or contact the Graduate School by e-mail (gsmast@umn.edu). Note: Some commonly used forms are available on the Graduate School Website at <www.grad.umn.edu/forms>.

Professional Master’s Degree in Engineering

A number of engineering departments offer programs, with emphasis on design methods, leading to a designated professional master’s degree in engineering. The design emphasis of the program is on applications rather than development of engineering methods or material behavior, and on application of knowledge and methods of the physical and social sciences as well as of engineering. The programs are primarily for students who have already earned a bachelor’s degree in a related engineering field. Students normally are expected to be recent graduates of bachelor of science in engineering programs accredited by the Engineers’ Council for Professional Development (ECPD). Full-time students should be able to complete a program in one calendar year. The professional master’s degree in engineering is considered a terminal degree. Students should also note that only under exceptional circumstances will the Graduate School and the participating programs permit students to transfer from this program to a M.S. program.

Fields in Which the Program is Offered—Refer to the appropriate engineering department sections under Degree Programs and Faculty for information about the fields in which the professional master of engineering program is offered.

Regular Graduate School application procedures should be followed. Applicants should designate the master of engineering as their degree objective, to distinguish it from the master of science degree also available in the engineering fields.

Two Options for the Professional Master’s Degree in Engineering—The Graduate School offers the professional master’s degree in engineering with two options depending on the major field: a design project option and a coursework only option.

Design Project Option—This track requires 14 credits in the major field, a minimum of 6 credits in one or more related fields outside the major, and a design project measured as a minimum of 10 credits. Students who wish to complete a designated minor must complete 6 or more credits in a single field. The design project emphasizes problem solving based on engineering design criteria extant in industry. Performance of professional caliber is expected which can be subjected to the scrutiny and critique of senior design engineers in industry as well as engineering faculty.

Coursework Only Option—This track requires a minimum of 30 semester credits distributed to include 14 credits in the major field, a minimum of 6 credits in one or more related fields outside the major, and the remaining credits to be determined by the student and adviser subject to whatever guidelines the graduate faculty in the major field may place on such elective choices. Students who wish to complete a designated minor must complete 6 or more semester credits in a single field. No projects or papers specific to this track are required.

For information regarding degree completion requirements, which includes the submission of a final examination report form for both the design project and coursework only options, the student may contact the Graduate School by e-mail at gsmast@umn.edu.

Master of Fine Arts

Admission to master of fine arts programs is limited to students with the bachelor’s degree or its equivalent from an accredited university or college who demonstrate exceptional promise as creative artists in one or more of the subfields in their major area. For a list of the subfields and for specific program requirements, see Art; Creative Writing; Design, Housing, and Apparel; and Theatre Arts under Degree Programs and Faculty.

Specialist Certificate in Education

The Graduate School offers two-year specialist certificates in several education fields (see Educational Policy and Administration, Educational Psychology—Counseling/Personnel, Educational Psychology—School Psychology, and Educational Psychology—Special Education under Degree Programs and Faculty for descriptions). The specialist certificate requires a minimum of 60 credits.

Transfer of Credits—With approval of the adviser, director of graduate studies in the major, and Graduate School, transfer of up to 50 percent of the degree program coursework from any combination of the following is permitted.

1. Other recognized graduate schools;
2. Adult special, summer session, and College of Continuing Education registrations at the University of Minnesota before spring semester 2001;
3. 99PRD registrations at the University of Minnesota;
4. Registration through other University of Minnesota units (e.g., College of Education, Law School) in pursuit of graduate-level degrees.

Individual graduate programs have the option of specifying a lower percentage of coursework for transfer.

Work to be transferred must be graduate level (postbaccalaureate) and have been taught by faculty authorized to teach graduate courses. It is the student’s responsibility to provide appropriate course documentation (e.g., course syllabi, faculty status information) supporting proposed transfer credits to the program.
In the case of a transfer from a non-U.S. institution, the credits must have been earned in a program judged by the Graduate School to be comparable to a graduate degree program in a graduate school of a regionally accredited institution in the United States.

Regarding the transfer of coursework from either a U.S. or non-U.S. institution, if conditions are placed on a student’s admission to exclude certain coursework from transfer to a Graduate School degree program, that coursework may not be transferred regardless of the level of the coursework or the status of the school or college in which it was earned.

Credits are transferred by including the courses in the proposed degree program. Credits not accepted as part of a student’s degree program cannot be transferred to the Graduate School transcript.

Courses taken before the awarding of a baccalaureate degree cannot be transferred.

Degree Requirements—Students pursuing the specialist certificate ordinarily complete the requirements for the master’s degree with a major in the field of the specialty as the first year of the program. All first-year students must meet regular admission, candidacy, and examination requirements for the master of arts degree and should specify as their degree objective the master’s degree on the application. A decision regarding continuation beyond the master’s degree in a specialist program depends on an evaluation of performance in meeting the master’s requirements.

Time Limit for Earning the Specialist Certificate—The specialist certificate can be completed in two years but must be completed and awarded in 12 years. The 12-year period begins with the earliest coursework included on the program form, including any transfer work. Graduate credits earned before the 12-year span are evaluated by the faculty in the area of specialization and may be recommended to the Graduate School for acceptance on a full or partial basis. Students who expect to exceed the 12-year limit may petition the Graduate School for an extension of time; contact the Graduate School, 316 Johnston for more information.

Final Examinations—The Graduate School requires a final examination for specialist certificate candidates; this may be written, oral, or both, at the discretion of the examining committee. A committee of at least four examiners is appointed by the dean of the Graduate School upon recommendation of the faculty in the major field at the time the official degree program is approved. This committee must include two members from the student’s major field and two members from outside the major field. Committee members cannot represent more than one field simultaneously.

The examination is coordinated by the chair of the student’s examining committee. The results of the examination are reported on the final examination form that the student must obtain from the Graduate School, 316 Johnston, or by requesting a graduation packet online at <www.grad.umn.edu/forms> before the examination is held. This form will be released only if the student has a degree program form approved by the Graduate School and has maintained active status (see Registration Requirements under Registration on page 14). A majority vote of the committee, all members present and voting, is required to pass the examination. A student who fails the examination may be reexamined once, at the option of the examining committee, to retake the examination providing the reexamination is conducted by the original committee.

Except as noted in this section, the requirements and procedures for completing the specialist certificate are comparable to those described under Plan B: Master’s Degree Without Thesis on page 18.

A degree program approved by the Graduate School must be on file before the examination or graduation forms can be released to the student.

More Information—Students who have questions about the specialist certificate after reading this entire section may review online information at <www.grad.umn.edu/esss> or by e-mail (gsmast@umn.edu). Note: some commonly used forms are available on the Graduate School Web site at <www.grad.umn.edu/forms>.

**Doctor of Philosophy Degree**

The doctor of philosophy degree is awarded chiefly in recognition of high attainment and ability in a special subject field as demonstrated by passing the required examinations covering both a candidate’s general and special subject fields, and by preparing and successfully defending a thesis based on original research that makes a significant contribution to knowledge in the student’s field.

Registration Requirement for the Doctoral Degree—Doctoral students are generally required to register for major field and minor or supporting program coursework. Students should consult their graduate program to determine whether coursework completed while pursuing a University of Minnesota master’s degree may be used to meet their doctoral coursework requirement.

Doctoral students are required to enroll for a minimum of 24 thesis credits (8888) while writing the doctoral thesis. Students may not register for thesis credits until the semester after they have passed their preliminary oral examination.

Doctoral Pre-Thesis Credits (8666)—These credits are available for doctoral students who have not yet passed their preliminary oral examination but need to be registered in the Graduate School to meet requirements of agencies or departments outside the Graduate School (e.g., loan agencies). Doctoral pre-thesis credits are not graded. Note: Registration for doctoral pre-thesis credits cannot be used to meet any Graduate School degree requirements other than to maintain active status (refer to Registration Requirements).

Transfer of Credits for the Doctoral Degree—Students may request from the Graduate School the transfer of the following types of course credits by including the courses on the proposed degree program form. In all cases, official transcripts of the graded work must be attached to the degree program form, unless they have already been included in the student’s Graduate School file. Transfer of graduate credit is not allowed for courses taken before the awarding of a baccalaureate degree.

From Other Graduate Institutions—Graduate credits earned at other recognized graduate institutions may be applied to doctoral degrees if the coursework is graduate level and was taught by faculty authorized to teach graduate courses.
In the case of a transfer from a non-U.S. institution, the credits must have been earned in a program judged by the Graduate School to be comparable to a graduate degree program of a regionally accredited institution in the United States.

In the case of a transfer from either a U.S. or non-U.S. institution, if conditions are placed on a student’s admission to exclude certain coursework from transfer to a Graduate School degree program, that coursework may not be transferred regardless of the level of the coursework or the status of the school or college in which it was earned.

From Awarded University of Minnesota Graduate-level Degrees—Graduate credits earned while pursuing a University of Minnesota graduate-level degree (offered by a unit other than the Graduate School) may be applied to doctoral degrees. The number of graduate credits accepted for transfer is determined by the graduate program faculty.

Graduate credits taken while pursuing a University of Minnesota graduate-level degree offered by a unit other than the Graduate School that was not awarded may be applied to doctoral degrees; however, such credits will be included in the 12-credit transfer maximum described immediately below.

From Adult Special, Summer Session, College of Continuing Education (CCE), and 99PRD Registrations—A maximum of 12 semester credits of completed graduate-level coursework from any combination of adult special*, summer session*, CCE*, and 99PRD registrations may be transferred to the doctoral program.

* The Graduate School will accept only adult special, summer session, and CCE coursework taken at the University of Minnesota before spring semester 2001. Any registration in these categories taken spring semester 2001 or later will not be accepted towards any Graduate School degree requirements.

Time Limit for Earning the Doctoral Degree—All requirements for the doctoral degree must be completed and the degree awarded within five calendar years after passing the preliminary oral examination (see Preliminary Written and Oral Examinations on page 22).

Students who are unable to complete the degree within the five-year limit may petition the Graduate School for an extension of up to one additional year. Extensions beyond one year are considered only in the most extraordinary circumstances. Contact the Graduate School, 316 Johnston, concerning information to be included in such a petition. To ensure timely consideration, petitions should be filed no later than early in the term in which the time limit expires.

If the petition is approved, the student is notified of the expectations for progress and completion of the degree. If the petition is denied, the student is terminated from doctoral candidacy and from the graduate program.

Students who have been terminated under such circumstances may apply for readmission to the Graduate School; readmission under these circumstances is not assured, however. The faculty in the major field and the Graduate School set any readmission conditions on the student’s resumption of work toward the degree, such as registering for additional coursework, retaking written examinations, filing a revised thesis proposal, completing the degree within a specified time period, or other appropriate terms.

Official Program for the Degree—Students are expected to file an official program for the degree during their second year of study; the specific semester depends on individual major field requirements. Students should submit their completed degree program forms to the Graduate School at least two semesters before the term in which they plan to take the preliminary oral examination. The degree program form is available from the Graduate School, 316 Johnston Hall, or online at <www.grad.umn.edu/forms>. The form should list all coursework, completed and proposed, that will be offered in fulfillment of degree requirements in the major field and in the minor field or supporting program, including any transfer work (see Transfer of Credits for the Doctoral Degree on page 20). If the student’s major field requires proficiency in one or more foreign languages, these should be specified as well. The members of a student’s preliminary oral examining committee are appointed by the dean of the Graduate School on recommendation of the faculty in the major field at the time the student’s official degree program is approved.

A degree program approved by the Graduate School must be on file before the student is permitted to schedule the preliminary oral examination.

Changes in Approved Program—Once approved, the program must be fulfilled in every detail to meet graduation requirements and before the final oral examination can be scheduled. Program changes should be requested by completing a Graduate School petition form. The petition form is available from the Graduate School or online at <www.grad.umn.edu/forms>.

Minimum Grade Requirements—The Graduate School does not define a minimum GPA for courses included on an official doctoral degree program form, although individual programs are free to do so as part of their effort to monitor their students’ academic achievement and degree progress. Courses with grades of A, B, C (including C-), and S may be included in the official degree program, but grades of S are not calculated in the GPA. Students pursuing a doctoral degree must register for doctoral thesis credits (8888); these registrations are not graded and therefore cannot be used to meet course credit requirements. At least two-thirds of the total number of course credits included in any degree program must be taken A-F. Individual major fields may specify more stringent requirements concerning the application of S-N courses to a degree program.

Major Field Credits—The Graduate School does not specify a minimum number of credits in the major field for the doctoral degree. Depending on previous preparation and the nature of the research undertaken, the number of credits required for individual students, even within the same major field, may vary considerably.

Minor Field or Supporting Program Work—For the doctoral degree, a minimum of 12 credits must be completed in the minor field or supporting program. With a traditional minor, this work is in a single field related to the major; the minor field must be declared before the student passes the preliminary oral examination. If the student chooses a supporting program, it must be composed of a coherent pattern of courses, possibly embracing several disciplines. Both the minor and supporting program options may require students to take written preliminary examinations in the fields included, but students electing the supporting program option are not expected to have competency in each of the fields comparable to that of a person with a traditional minor.
For majors in clinical branches, the minor field or supporting program must be in nonclinical fields that will serve as a basis for the proposed clinical specialization. This fundamental work should be concentrated early in the program. Familiarity with those phases of the nonclinical disciplines essential to proficiency in the major specialty is required.

Language Requirement—See Degree Programs and Faculty to determine the language requirement, if any, for a specific major field. The Graduate School monitors the fulfillment of language study when a major field requires a language. Information on how to demonstrate proficiency, and on conditions under which proficiency is recorded on the official transcript, is available from the Graduate School, 316 Johnston Hall, or online at <www.grad.umn.edu/forms>.

Official Doctoral Candidacy—Doctoral candidacy is established when a student passes the preliminary oral examination (including “pass with reservations”).

More Information—Students who have questions about the doctoral degree, including information on examinations and the thesis, may review online information at <www.grad.umn.edu/gss> or contact the Graduate School by e-mail (gsdoc@umn.edu). Note: Some commonly used forms are available on the Graduate School Web site at <www.grad.umn.edu/forms>.

Preliminary Written and Oral Examinations

Preliminary Written Examination—All doctoral students are required to pass a written examination in the major field. This examination covers all work completed in the major field and may include any work fundamental to this field. The results of the examination are reported on the preliminary written examination report form, signed by the student’s adviser and the director of graduate studies in the major field. It is the student’s responsibility to ensure that this form is received by the Graduate School, 316 Johnston Hall, before scheduling the preliminary oral examination.

Preliminary Oral Examination—Students take the preliminary oral examination after completing a substantial part of the coursework and passing the preliminary written examination, but before writing the dissertation.

Preliminary Oral Examining Committee—The examination is administered by the committee appointed by the dean of the Graduate School on recommendation of the faculty in the major field at the time the student’s official doctoral degree program is approved. The examining committee includes a minimum of four members: three (including the student’s adviser) from the major field and one from the minor field or supporting program. Committee members cannot represent more than one field simultaneously.

All assigned members must be present at the preliminary oral examination; the absence of any member results in an invalid examination.

Changes in the Preliminary Oral Examining Committee—Substitutions on the examining committee may be necessitated by such circumstances as a faculty member’s temporary absence on leave from the University. The adviser or the director of graduate studies must request the Graduate School’s approval of such substitutions well in advance of the examination. Substitutions necessitated by emergency situations must also be approved in advance. In such cases, the adviser should consult with the Graduate School staff by telephone before the start of the examination.

Scheduling the Preliminary Oral Examination—it is the responsibility of the student to schedule the preliminary oral with the examiners and with the Graduate School, 316 Johnston Hall, at least one week in advance. In certain of the health science fields, however, the faculty requires 30 days’ notice of the date of the preliminary oral.

Preliminary oral examinations should not be scheduled during the summer unless the members of the assigned committee can be assembled without substitution.

Before the oral examination can be scheduled, a degree program form approved by the Graduate School must be on file, along with a written examination report form indicating that the student has passed the preliminary written examination. The Graduate School must also confirm that the student has maintained active status (see Registration Requirements under Registration on page 14).

If these documents are on file and the student has active status, the Graduate School issues the preliminary oral examination report form and instructions for conducting the preliminary oral examination to the chair of the examining committee. A copy of the student’s degree program form is also sent to both the chair of the examining committee and the student; this may be useful to the committee in reviewing the student’s preparation and in confirming the completion of degree requirements, including coursework and any language requirements. The preliminary oral examination may be authorized in spite of deficiencies in these requirements, unless more stringent standards have been established by the major field. All requirements must be completed before the final oral examination may be scheduled.

Preliminary Oral Examination Content and Outcome—All doctoral students are required to pass an oral examination in the major field. The preliminary oral examination covers the major field, the minor field or supporting program, and any work fundamental to these areas, including possible plans for thesis research. Unlike the final oral examination, the preliminary oral is conducted as a closed examination, attended by only the student and the examining committee.

Immediately before the preliminary oral examination, the committee stipulates the objectives of the examination and, in consultation with other members of the examining committee, determines how the examination is to be conducted. Immediately after the examination, the candidate is excused from the room and a written secret ballot is taken before discussing the examination. Following the discussion, a second and final vote is taken, and the participants sign in the appropriate place on the report form, which is to be returned to the Graduate School, 316 Johnston Hall, no later than the first workday after the examination.

The outcome of the examination, with all committee members present and voting, is recorded in one of three ways: pass, pass with reservations, or fail. The voting proportions necessary for these decisions are as follows: if the committee consists of four members, a favorable verdict for passing consists of either a unanimous vote or a vote of 3-1; if the committee consists of five members, a unanimous vote or a vote of 4-1 is needed; if the committee consists of six members, a unanimous vote or a vote of 5-1 or 4-2 is needed; and if there are seven members, a unanimous vote or a vote of 6-1 or 5-2 is needed. Candidates who do not earn committee votes in these proportions fail the examination. If, to achieve the minimum number of
votes to reach a verdict of pass, any vote of pass with reservations is included, then the outcome will be recorded as a pass with reservations. A vote to pass the student with reservations still constitutes a passing vote.

Pass With Reservations—If the student passes the examination with reservations, the student is informed immediately, but the committee is permitted one week in which to convey its reservations to the student in writing, informing the student of the steps that must be taken to remove them. A copy of this letter must be sent to the Graduate School and should accompany the signed oral examination report form. When the student has satisfied the committee’s reservations, a second letter informing the student and the Graduate School that the reservations have been removed and that the student may proceed toward the degree is also required. Both letters should be written by the committee chair. The final oral examination may not be scheduled until the Graduate School has received a copy of the letter indicating that the reservations have been removed.

If the committee members disagree as to whether the reservations have been satisfactorily removed, the committee chair asks for another vote, the results of which are subject to the same voting proportions as the initial vote. If the student is unable to satisfy the committee’s reservations, his or her doctoral candidacy and graduate student status may be terminated.

Failure of the Preliminary Oral Examination—Students who fail the examination may be excluded from candidacy for the degree or may be allowed, on unanimous recommendation of the examining committee, to retake the examination, providing the reexamination is conducted by the original preliminary oral examining committee.

In no case may the reexamination take place before 10 weeks have passed. No more than one reexamination is allowed.

Recess of a Preliminary Oral Examination—If the preliminary oral examining committee recesses without having determined whether a student has passed the examination, the chair of the committee must send a letter to the dean of the Graduate School explaining the reasons for the recess and noting the date on which the examining committee will reconvene. If the recess will be longer than one week, the examination report form must be returned to the Graduate School, 316 Johnston Hall, and the student must reschedule the examination with the Graduate School one week in advance. A new examination report form will be mailed to the chair of the committee one week before the date on which the committee will reconvene. The reconvened committee must be composed of the same members as the original preliminary oral examining committee.

Ph.D. Thesis

The thesis must demonstrate the student’s originality and ability for independent investigation, and the results of the research must constitute a contribution to knowledge. The thesis must exhibit the student’s mastery of the literature of the subject and familiarity with the sources. The subject matter must be presented with a satisfactory degree of literary skill.

Thesis Proposal—At the time of submission of the doctoral program, or not later than the first semester after passing the preliminary oral examination, students must file the thesis proposal form with the Graduate School, 316 Johnston Hall. The form must include the proposed thesis title and a thesis proposal, about 250 words in length, describing the research to be undertaken and the methods to be employed in carrying it out.

The thesis reviewers and other members of the final oral examining committee are appointed by the dean of the Graduate School upon recommendation of the faculty in the major field at the time the student’s thesis proposal is approved.

A thesis proposal approved by the Graduate School must be on file before the reviewers report form can be issued to the student.

Changes in the Thesis Title or the Thesis Proposal—Changes in the wording of the thesis title may be made without special approval, but changes cannot be made after the final thesis copy is submitted to the Graduate School. If substantive changes are made in the nature of the thesis research itself, the student must submit a revised thesis proposal immediately.

Language of the Thesis—Theses must normally be written in English or in the language of instruction. If a thesis is to be written in a foreign language, including a language of instruction other than English, a letter should be attached to the thesis proposal form when it is submitted to the Graduate School. This letter should confirm that the recommended thesis reviewers (including the outside reviewer) are qualified to read, comprehend, and criticize a thesis in the foreign language.

Published Work Included in or in Lieu of the Thesis—The thesis may include materials that students have published while University of Minnesota graduate students, provided the research was carried out under the direction of the graduate faculty and approved by the adviser for incorporation into the thesis. Such publication is welcomed as the best demonstration of quality in a student’s research, and the Graduate School encourages the practice. The adviser should notify the Graduate School in writing of the intention to publish part of the thesis material, but the Graduate School’s approval is not required.

In cases where the thesis research is to be presented to the examining committee in the form of one or more articles that have been published, or are in a form suitable for publication, the student should contact the Graduate School, 316 Johnston Hall, for information on accommodating such a presentation to the required thesis format.

Thesis Reviewers—All members of the final oral examining committee read the thesis, although only those designated as thesis reviewers sign the report form certifying that the thesis is ready for defense.

The designated thesis reviewers consist of the adviser, representing the major field, and at least two other members of the final oral examining committee, including at least one representative from the major field and one representative from the minor or supporting program. Part of this group of reviewers should come from outside of the graduate program’s thesis advisory committee, if the program uses such a committee. Reviewers cannot represent more than one field simultaneously.

Certification of the thesis as ready for defense is a necessary step toward the final oral examination, but in no way diminishes the significance of that examination.

The thesis reviewers report form is obtained by the student from the Graduate School, 316 Johnston, or by requesting a graduation packet online at <www.grad.umn.edu/forms>. This form will be released
only if the student has on file a thesis proposal form approved by the Graduate School and has maintained active status (see Registration Requirements under Registration on page 14).

**Delivery of the Thesis to Thesis Reviewers**—At the time the candidate submits a draft of the thesis to the thesis reviewers, copies must also be provided to all other members of the final oral examining committee. The thesis abstract must be included with the thesis when it is distributed to the committee. The abstract must be signed by the adviser and submitted, with the final thesis copy, to the Graduate School which forwards both to University Microfilms.

To permit faculty to allocate sufficient time to read the thesis and decide whether it is ready for defense, students must notify their adviser and other members of the final oral committee at least two weeks in advance that the thesis will be delivered on a particular date. All members of the examining committee must then have at least two weeks to read the thesis after it has been delivered.

When signing the thesis reviewers report form, the reviewers have three options: the thesis is acceptable for defense as presented; the thesis is acceptable for defense with minor revisions; or the thesis requires major revisions and is not acceptable for defense as presented.

The reviewers must be unanimous in certifying that the thesis is ready for defense, whether as presented or with minor revisions. If this is the case, and all other requirements have been met (see Final Oral Examination below), the Graduate School authorizes the final oral examination. In any instance where revisions are required, the committee must inform the student in writing of the revisions required, and all questions concerning such revisions must be resolved before the final copies of the thesis are submitted and the degree is conferred. It is the adviser’s responsibility to ensure that revisions required by the reviewers are satisfactorily made (see Preparation and Submission of the Copies of the Thesis on the next page).

**Final Oral Examination**

All doctoral students are required to successfully defend their theses in a final oral examination and graduate within five calendar years after passing the preliminary oral examination. To be eligible for the final oral examination, a student must have completed all work on the official doctoral degree program form, including the language requirement, if any; must have passed both the written and oral preliminary examinations; must have an approved thesis proposal on file with the Graduate School; must have maintained active status; and must have satisfied the thesis credit requirement. In addition, the thesis must have been certified by the readers as ready for defense.

**Scheduling the Final Oral With the Graduate School**—The student must schedule the examination at least one week in advance with both the committee and the Graduate School (see Clearance for Graduation on the next page). In certain of the health science fields, however, the faculty requires 30 days’ notice of the date of the final oral.

When the examination is scheduled, the student’s Graduate School file is checked to determine if the student can be cleared to take the examination as stipulated above. If so, the report form for the final oral examination will be forwarded to the chair of the examining committee. If difficulties are apparent, the Graduate School staff will contact the student immediately.

A minimum of 10 weeks must intervene between the preliminary oral and the final oral examinations. Also, the final oral should not be scheduled during the summer unless the committee members can be assembled without substitution.

**Final Oral Examining Committee**—The committee must consist minimally of four members: three (including the student’s adviser) from the major field and one from the minor field or supporting program. At least one committee member from the minor field or supporting program should represent a graduate program and budgetary unit other than that of the student’s major. Committee members cannot represent more than one field simultaneously.

Although the student’s adviser serves as a member of the final oral examining committee, another member of the committee is designated as the chair and functions in this capacity at the final oral examination. The chair must be a full member of the graduate faculty and may be from either the major field or the minor field or supporting program. The chair and other members of the final oral examining committee are appointed by the dean of the Graduate School upon recommendation of the faculty in the major field at the time the student’s thesis proposal is approved.

All committee members must be present at the examination; the absence of any member results in an invalid examination.

**Changes in the Final Oral Examining Committee**—Substitutions on the examining committee may be necessitated by such circumstances as a faculty member’s temporary absence on leave from the University. The adviser or the director of graduate studies must request the Graduate School’s approval for such substitutions well in advance of the examination. Substitutions necessitated by emergency situations must also be approved in advance. In such cases, the committee chair should consult with the Graduate School staff by telephone before the start of the examination.

**Form of the Final Oral Examination**—The final oral examination consists of a seminar in which the candidate presents the thesis and to which the scholarly community is invited. The seminar may take place only after the thesis has been judged ready for defense. The examination is limited to the candidate’s thesis subject and relevant areas. It will not exceed three hours. A closed meeting between the candidate and the appointed examining committee immediately follows the thesis presentation. The candidate is then excused and the vote taken on whether the candidate passed the examination.

**Reporting the Results of the Final Oral Examination**—Upon completion of the examination, a formal vote of the committee is taken. To be recommended for the award of the doctoral degree, candidates must receive a vote with no more than one dissenting member of the total examining committee. If the student has clearly passed or clearly failed the examination and all members have signed the final examination report form, the report form must be returned to the Graduate School no later than the first workday following the examination.

The adviser should be responsible for ensuring the inclusion of appropriate modifications and required revisions. If any, in the final thesis. The final oral examination report form should not be signed and submitted to the Graduate School until all revisions have been made. If the form will be held for more than one week, a letter must be sent to the Graduate School stating that the form is being held pending required revisions.
Once the final report form has been returned to the Graduate School indicating that the student has either passed or failed the final oral examination, a hold is placed on the student’s records to prevent further registration in the Graduate School. If the adviser indicates that the student needs additional time to make minor revisions to the thesis before it is submitted to the Graduate School, the student is permitted to register for one additional semester. Once the thesis has been submitted, no further registration in the Graduate School is permitted unless the student has been admitted to professional development status or to another major field.

Recess of a Final Oral Examination—On rare occasions, the examining committee may conclude that the final oral examination should be recessed, to be reconvened at a later date. Guidelines for such circumstances are sent to the chair of each examining committee along with the final oral examination report form.

The Graduate School need not be notified until after the fact of informal recesses of up to a week. In the case of a longer recess, the committee must inform the student in writing of the reasons for recessing the examination, including any deficiencies noted in the student’s thesis or defense, and must indicate when they expect to reconvene and resume the examination. A copy of this letter must be sent to the Graduate School, along with the unsigned final examination report form. When the student and the committee are ready to reconvene the examination, it should be scheduled in the normal way with the Graduate School. A new examination report form will be mailed to the chair of the committee one week before the date on which the committee will reconvene. The reconvened committee must be composed of the same members as the original final oral examining committee.

Preparation and Submission of the Copies of the Thesis

A copy of the thesis must be submitted to the Graduate School. The student’s adviser(s) must sign the thesis to confirm that it is complete and satisfactory in all respects and that all revisions required by the final examining committee have been made. Instructions for the preparation of the thesis, including format specifications and adviser’s signature requirements, can be obtained from the Graduate School, 316 Johnston Hall, or online at <www.grad.umn.edu/forms>.

Pursuit of a Second Ph.D. Degree

Students are not permitted to earn two Ph.D. degrees at the same time in two fields using the same program of study and thesis. Although students are generally discouraged from doing so, special circumstances may warrant taking a second Ph.D. degree at a later date, but only when a completely separate program and thesis are involved.

Doctor of Education

The University of Minnesota awards the doctor of education (Ed.D.), its highest professional degree in educational policy and administration and work, community, and family education, in recognition of satisfactory academic preparation and demonstrated competence for professional activity in those fields.

Standards and procedures for admission, and expectations for scholastic performance, are comparable to those for the Ph.D. A major part of the program must be conducted in full-time residence, including at least one continuous academic year at advanced stages of the program. Rules and procedures governing examinations, candidacy, time limits, appointment of committees, and the thesis for the Ph.D. apply in general to the Ed.D.

For requirements, see Doctor of Philosophy Degree on page 20, or contact the Graduate School by e-mail at gsdoc@umn.edu. Note: Some commonly used forms are available on the Graduate School Web site at <www.grad.umn.edu>.

Doctor of Musical Arts

The program for the professional doctor of musical arts (D.M.A.) degree has a performance-teaching orientation. Standards and procedures for admission, and expectations for scholastic performance, are comparable to those for the Ph.D. Emphases offered, and details concerning major and minor requirements for the D.M.A., are included in the Music section under Degree Programs and Faculty. Rules and procedures governing examinations, candidacy, time limits, and appointment of committees for the Ph.D. apply in general to the D.M.A.; in place of the thesis, a project document or paper is required. This document is submitted only to the music graduate program office.

For requirements, see Doctor of Philosophy Degree on page 20, or contact the Graduate School by e-mail at gsdoc@umn.edu. Note: Some commonly used forms are available on the Graduate School Web site at <www.grad.umn.edu>.

Joint Degrees

The University offers the opportunity for study towards two degrees in the following areas: M.D./Ph.D. program; master of social work (M.S.W.) and master of public policy (M.P.P); M.S.W. and master of public health (M.P.H.); M.P.P. and master of science (M.S.) in health services research, policy, and administration; J.D. and M.P.P.; M.P.P. and Ph.D. in political science and M.P.H.; Doctor of Veterinary Medicine and M.S./Ph.D. in veterinary medicine; and a joint J.D./M.S./Ph.D. program in law, health, and life sciences. For further information, contact the program.

Clearance for Graduation

Degrees are awarded at the end of each month. To qualify for graduation for a particular month, a student must submit the Application for Degree form on or before the first workday of that month and must complete the examination and all other requirements (including necessary forms and fees) by the last workday of that month.

Commencement Ceremony

Two Graduate School commencement ceremonies are held each year—in late spring and in late fall. Graduates are encouraged, but not required, to attend. To make sure their names appear in the program distributed at the commencement ceremony, students must submit the commencement attendance form by the deadline specified in the Graduate School section of the Class Schedule. Commencement information, including deadlines and forms, can be found online at <www.grad.umn.edu/gsss>.
## Majors and Degrees

### Twin Cities Campus

#### Research Degrees (Ph.D., M.A., M.S.)

<table>
<thead>
<tr>
<th>Majors</th>
<th>Degrees Offered</th>
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</thead>
<tbody>
<tr>
<td>Aerospace Engineering</td>
<td>M.S.Aero.E., Ph.D.</td>
</tr>
<tr>
<td>Agricultural and Applied Economics</td>
<td>M.S., Ph.D.</td>
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<tr>
<td>American Studies</td>
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<tr>
<td>Ancient and Medieval Art and Archaeology</td>
<td>M.A., Ph.D.</td>
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<td>Animal Sciences</td>
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<td>Anthropology</td>
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<td>Applied Plant Sciences</td>
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<td>Art History</td>
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<td>Astrophysics</td>
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<td>Biocomplexity, Molecular Biology, and Biophysics</td>
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<td>Biomedical Engineering</td>
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<tr>
<td>Biomedical Science</td>
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<tr>
<td>Biophysical Sciences and Medical Physics</td>
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<td>Biostatistics</td>
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<td>Biosystems and Agricultural Engineering</td>
<td>M.S.B.A.E., Ph.D.</td>
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<td>Business Administration</td>
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<tr>
<td>Cellular and Integrative Physiology</td>
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<td>Chemical Engineering</td>
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<td>Child Psychology</td>
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<td>Chinese</td>
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<td>Classical and Near Eastern Studies</td>
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<td>Comparative Studies in Discourse and Society</td>
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<td>Conservation Biology</td>
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<td>Control Science and Dynamical Systems</td>
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<td>Design, Housing, and Apparel</td>
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<td>Family Social Science</td>
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<td>Feminist Studies</td>
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<td>Fisheries</td>
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<td>French</td>
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<td>Geography</td>
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<td>Germanic Studies</td>
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<td>Health Informatics</td>
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<td>Health Services Research, Policy, and Administration</td>
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<tr>
<td>Hispanic and Luso-Brazilian Literatures and Linguistics</td>
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<td>History</td>
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<td>History of Medicine and Biological Sciences</td>
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<td>History of Science and Technology</td>
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<td>Human Resources and Industrial Relations</td>
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<td>Industrial Engineering</td>
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<td>Interdisciplinary Archaeological Studies</td>
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<td>Japanese</td>
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<tr>
<td>Kinesiology</td>
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<td>Linguistics</td>
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<td>Mass Communication</td>
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### Research Degrees (Master's Only)

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<th>Majors</th>
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<td>Elementary Education</td>
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<td>Italian</td>
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<td>Physical Therapy</td>
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<td>Recreation, Park, and Leisure Studies</td>
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<td>Russian Area Studies</td>
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### Professional Degrees

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<td>Computer Engineering</td>
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1 Also see Certificate of Specialist in Education offerings near the end of this list.
Duluth Campus

Research Degrees (Master's Only)

Majors

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<td>Geology</td>
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<td>Music</td>
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<td>Physics</td>
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Professional Degrees

Majors

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<td>Art</td>
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<td>Business Administration</td>
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<tr>
<td>Communication Sciences and Disorders</td>
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<tr>
<td>Counseling Psychology</td>
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<tr>
<td>Engineering Management</td>
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<tr>
<td>Liberal Studies</td>
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<tr>
<td>Music</td>
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<tr>
<td>Social Work</td>
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</table>

Freestanding Minor

Linguistics

McKnight Land-Grant Professorship Winners for 2001-03

The goal of this program is to advance the careers of the University’s most promising junior faculty at a crucial period in their professional lives. Recipients are honored with the title McKnight Land-Grant Professor, an endowed chair which they will hold for two years. The award consists of a $25,000 research grant in each of two years, summer support, and a research leave in the second year.

The winners were chosen for their potential for important contribution to their field; the degree to which their past achievements and current ideas demonstrate originality, imagination, and innovation; the potential for attracting outstanding students; and the significance of the research and the clarity with which it is conveyed to the non-specialist. Profiles of the 14 recipients follow.

Mohamed-Slim Alouini, Electrical and Computer Engineering

Analysis of wireless communication transmission techniques

Bruce P. Braun, Geography

The theoretical relationship between nature, the state, and modernity

Patricia Crain, English

The history of literacy as a concept and symbol in American culture

Shaul Hanany, Physics and Astronomy

Understanding the origin and evolution of the universe through measurements of cosmic microwave background radiation

George E. Heimpel, Entomology

Integrating principles of insect ecology with biologically-based pest management

Richard P. Hsung, Chemistry

Synthesis of the naturally-occurring substance arisugacin

Victoria L. Interrante, Computer Science and Engineering

The science behind the art of communicating information through images

Canan Karatekin, Child Development

The nature and development of normal cognitive processes and how they go awry in mental disorders

Monica Luciana, Psychology

Human brain-behavior relationships

Gary J. Muehlbauer, Agronomy and Plant Genetics

Understanding the molecular mechanisms governing interactions between fungus and plants

Claudia Schmidt-Dannert, Biochemistry, Molecular Biology, and Biophysics

Combining metabolic engineering and molecular evolution techniques to create biosynthetic pathways

Yoav Segal, Medicine

Genetic diseases of the kidneys

Jiaping Wang, Mathematics

Geometric analysis and partial differential equations

Barbara Y. Welke, History

A consuming passion: product liability and the rights revolution in twentieth century America