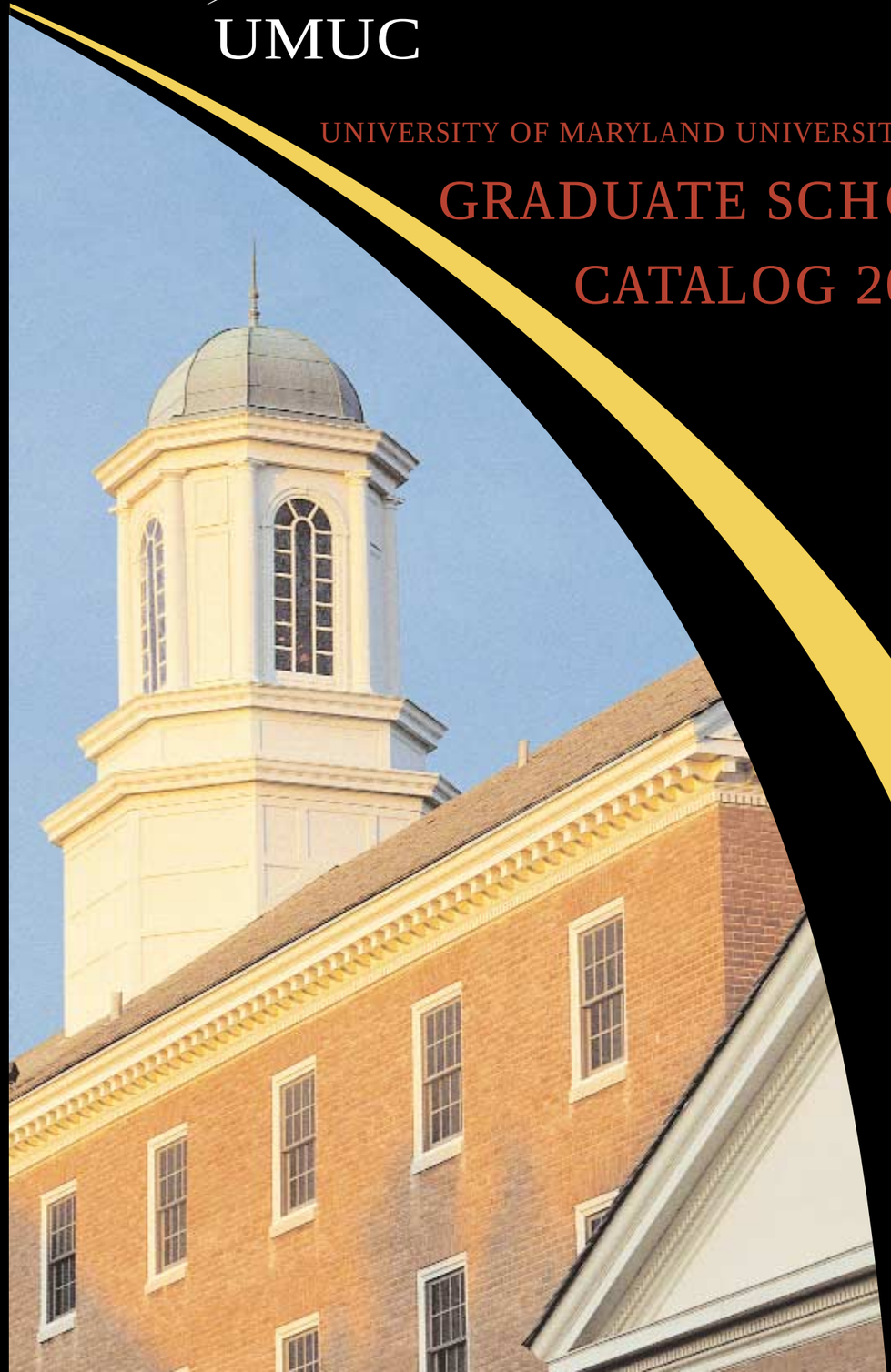
UMUC

UNIVERSITY OF MARYLAND UNIVERSITY COLLEGE

GRADUATE SCHOOL CATALOG 2002–2003



UNIVERSITY OF MARYLAND UNIVERSITY COLLEGE GRADUATE SCHOOL CATALOG 2002–2003

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Policy Statement

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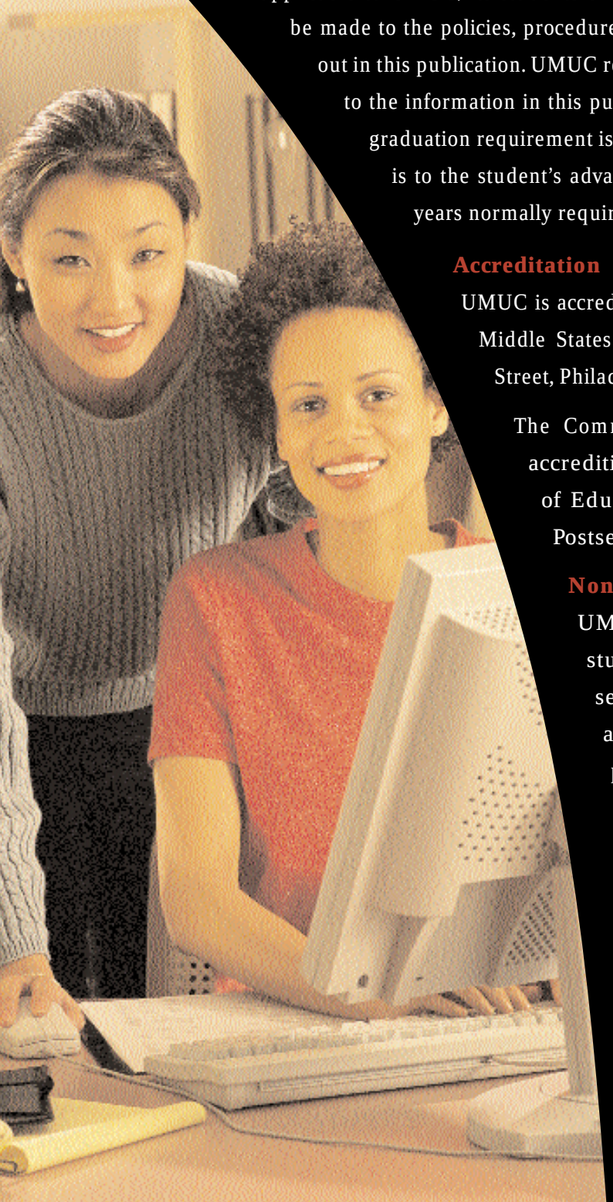

Accreditation

UMUC is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104 (215-662-5606).

The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Commission on Recognition of Postsecondary Accreditation.

Nondiscrimination

UMUC welcomes applications from prospective students and employees regardless of race, age, sex, physical or mental disability, religion, national origin, sexual orientation, marital status, or political affiliation.

General Graduate School Information

Phone: 240-582-2565
Toll Free: 1-800-888-UMUC
Fax: 240-582-2575
E-mail: gradschool@info.umuc.edu
Web: www.umuc.edu/grad

Instructional Sites

Adelphi/College Park
UMUC
3501 University Boulevard East
301-985-7200

Arnold
Anne Arundel Community College
101 College Parkway
410-266-3774

Annapolis
UMUC Annapolis Center
190 Admiral Cochrane Drive
Suite 120
410-266-3774 or 301-261-8119

Rockville
USM Shady Grove Center
9640 Gudelsky Drive
301-738-6000

Waldorf
UMUC Waldorf Center
3261 Old Washington Road
301-645-4303 or 301-870-6013

A Message From the Dean

Dear Members of the University of Maryland University College Community:

Welcome to the 2002–2003 academic year. This catalog contains current information about the Graduate School's degree programs, course offerings, faculty, student services, and academic policies. It will be a valuable resource as you pursue your graduate studies at University of Maryland University College.

The Graduate School now offers the Doctor of Management, 17 master's programs, and more than 35 graduate certificates. All of our master's degrees and certificates are available online, and many are also available in face-to-face or combined delivery formats. This year, we are pleased to offer two new graduate programs: the Master of Science in accounting and information technology and the Master of Science in health care administration. We created these new programs to meet the changing needs and interests of our students.

In addition, we are introducing a new format for the cohort-based Master of Business Administration (MBA) degree. Students can choose to take either the current online program or the new combined online and face-to-face format. Each course is 14 weeks long with a 3-week break between terms. This change affords students the opportunity to choose the format that is most convenient for them. We are committed to enhancing our current degrees to serve our students more effectively and to help them meet their professional and educational goals.

As current or potential graduate students at UMUC, it is important for you to know that we are committed to excellence in the quality of our curriculum and instruction. We expect no less of our busy, working, adult students than is expected by all high-quality graduate programs. As is true in our face-to-face classrooms, students in our online classes must read, write, reflect, analyze, evaluate, and apply the theories, concepts, and ideas that comprise the scholarly foundation in their disciplines, fields, and specific subjects. Our classrooms are highly interactive and we expect our students and faculty members to be engaged participants in class activities and discussions. The difference for online students is that they may participate more frequently and at different times than is true for a class that meets for a set time each week. In other words, we know that you expect and deserve an excellent graduate education and we are committed to making that happen!

On behalf of the faculty and staff of the Graduate School, please accept our best wishes for much success in your studies.

Christina A. Hannah, Ph.D.
Dean and Vice Provost, Graduate Programs

Welcome to University of Maryland University College

Introduction

For more than 50 years, University of Maryland University College (UMUC) has fulfilled its principal mission: to serve adult, part-time students through high-quality learning opportunities.

One of 11 degree-granting institutions in the University System of Maryland (USM), UMUC offers a complete range of educational services both in the traditional classroom and through contemporary distance learning formats. Classes are held throughout Maryland, in the Washington, D.C. metropolitan area, and in hundreds of locations overseas. Students also can "attend class" from anywhere in the world that is connected electronically—even from places as remote as Antarctica. *Forbes* magazine has proclaimed UMUC's Web site the "Best of the Web" and the school a "Forbes Favorite."

UMUC is an important partner in Maryland's economic development. Adhering to its mission of bringing convenient and relevant learning opportunities to the workforce, it has developed strong relationships with many prominent Maryland businesses to ensure that their education and training needs, and those of their individual employees, will be met.

UMUC conducts postsecondary programs for military service members and for U.S. government employees and their families through its Asian and European divisions. A two-year residential campus in Mannheim, Germany serves the sons and daughters of U.S. military and government personnel stationed abroad. Also, military personnel can earn their degree from anywhere in the world through distance education. UMUC provides an international graduate education to students from the United States and dozens of other countries. Russian students may earn a UMUC bachelor's degree through programs offered jointly at Far Eastern State University in Vladivostok and Irkutsk State University in Irkutsk.

UMUC is unlike any other institution of higher education in the world. It is preeminent in its offering of higher educational opportunities for adults in the United States. During 2001–2002, UMUC served more than 80,000 students worldwide. More than 5,700 academic degrees were awarded in the past year. UMUC holds commencement ceremonies annually in College Park, Heidelberg, Tokyo, Okinawa, Seoul, Irkutsk, and Vladivostok.

History and Scope

When the University of Maryland was reorganized in 1970, UMUC was designated as a separately accredited institution, an acknowledgment of the significance of its programs for adult learners. Since then, UMUC has expanded its regional and international programs and implemented a variety of innovative technologies to keep pace with its students' needs.

Higher education in Maryland was reorganized further in 1988, when the five institutions composing the University of Maryland joined with six other public colleges and universities to form the University System of Maryland. The System now consists of 11 degree-granting institutions—Bowie State University; Coppin State College; Frostburg State University; Salisbury State University; Towson University; University of Baltimore; University of Maryland, Baltimore; University of Maryland, Baltimore County; University of Maryland, College Park; University of Maryland Eastern Shore; and University of Maryland University College—and two research and service units, University of Maryland Biotechnology Institute and University of Maryland Center for Environmental Science.

UMUC cooperates with its sister institutions to extend educational opportunities throughout Maryland, at the University System of Maryland Shady Grove Center in Rockville, the Waldorf Center for Higher Education, and the UMUC Annapolis Center. UMUC also conducts classes at more than 20 additional sites in the region and offers

popular distance learning courses, using online instruction and other methods, in Maryland and around the globe.

UMUC is known for its commitment to excellence in both credit and noncredit programs. Undergraduate students may choose from 22 majors for their bachelor's degree, including 17 available online, and 37 minors. Students may take advantage of a variety of innovative options for earning credit, such as cooperative education, standardized examinations, and documentation of prior experiential learning. UMUC confers the doctor of management; master's programs in 17 areas of management, technology, and education with 23 specialty tracks; seven dual master's programs; and more than 35 certificates. Three graduate programs are also offered in an accelerated format: the Executive Master of Business Administration, the Executive Master of Science in technology management, and an Executive Master of Science in information technology, as well as three dual MBA programs and four dual accounting programs available in an accelerated format. The Office of Executive Programs also offers two certificates: the Executive Certificate for Chief Information Officers (CIO) and the Executive Certificate in the Strategic Management of Technology and Innovation.

UMUC enhances its programs with an array of support services tailored for adult students, such as academic advising, tutoring, career planning, and well-equipped computer labs.

UMUC headquarters are in Adelphi, Maryland, and include the Inn and Conference Center, an impressive residential facility where UMUC conducts educational conferences and adult learning programs that draw students from around the world. The center also houses a large collection of the work of Maryland artists, which is on public display year-round.

UMUC's place at the forefront of higher education worldwide has inspired a motto that expresses the scope of this innovative institution: "The sun never sets on the University of Maryland."

Graduate School College Park Commencement Date: Saturday, May 17, 2003

The Graduate School

Managing Technology for Today and Tomorrow

More than 7,500 students are actively pursuing their graduate studies at UMUC's Graduate School—a remarkable growth since the school's opening in 1978. UMUC extends the resources of the University System of Maryland to students employed throughout Maryland, the District of Columbia, Northern Virginia, the nation, and the world. Courses are offered during evening and weekend hours at locations that accommodate students' career and family commitments. Students taking online courses are not limited to UMUC's traditional face-to-face classes. Rather, they can pursue their studies when and where they choose.

Mission Statement

UMUC's Graduate School prepares students for effective leadership and citizenship in a global environment characterized by workforce diversity, increasing competition, and technological innovation. Programs are offered at the doctoral and master's levels and are designed to extend educational access to adult students in a convenient format.

The Graduate School strives for excellence in the quality of programs we offer and in their delivery. Our curriculum emphasizes leadership, communication, technology, globalization, diversity, systems thinking, critical thinking, information literacy, research competency, and ethical practices. We challenge our students and faculty to continuously demonstrate effective leadership as they apply what they study to their professions and their daily lives.

The Graduate School serves the Baltimore-Washington region and the State of Maryland, as well as other areas of the nation and world. We build collaborative relationships with other institutions and organizations to achieve our mission. Our goal is to become one of the premiere worldwide graduate institutions of choice among students and faculty.

Student Profile

Approximately 75 percent of the Graduate School's students have completed non-business-related studies such as engineering, computer science, biological and medical science, or social science. Most of the Graduate School's students are mid-career professionals who have made steady progress in their chosen fields. These students are now at the point where they desire additional preparation in anticipation of a new managerial assignment. The purpose of UMUC's varied graduate degree programs is to provide students with an opportunity to fully develop themselves as managers so they can confidently accept a more challenging role within their organizations.

The average student age is 36 years. Approximately 4 percent of all applicants to the Graduate School hold prior graduate degrees and more than 47 percent of the students are women.

Institute for Environmental Management

The Institute for Environmental Management (IEM) provides educational services in the field of environmental management to individuals and corporations, and to federal, state, and local governments. IEM contributes to the exchange of knowledge in this field by conducting workshops and short courses. Priorities include providing guidance to organizations on regulatory compliance requirements, working with government and the private sector to help them resolve environmental issues and improve technology transfer, and working with organizations to build the leadership competencies needed to respond to the expanding demand for environmental services.

For further information, contact the director of the Institute for Environmental Management by phone at 301-985-7824 or by e-mail at *rbeauchamp@umuc.edu*.

Graduate Programs

UMUC's Graduate School offers the following graduate programs:

- Doctor of Management (3 specialty tracks)
- Master of Arts in Teaching (online and 10-month residency required)
- Master of Business Administration (100-percent online or a combination online and face-to-face format; also offered in an accelerated, face-to-face format, see Executive Programs)
- Master of Distance Education (online only)
- Master of Education (online only)
- Master of International Management* (4 specialty tracks)
- MS in accounting and financial management*
- MS in accounting and information technology*
- MS in biotechnology studies* (1 specialty track)
- MS in computer systems management* (5 specialty tracks)
- MS in electronic commerce (online only)
- MS in environmental management* (1 specialty track)
- MS in health care administration*
- MS in information technology* (1 specialty track)
- MS in management* (11 specialty tracks)
- MS in technology management* (3 specialty tracks)
- MS in telecommunications management*
- Master of Software Engineering*

MBA Dual Degrees

- Master of International Management/MBA
- MS in electronic commerce/MBA
- MS in management/MBA
- MS in technology management/MBA

Accounting Dual Degrees

- MS in accounting and financial management/ MS in management—accounting specialization
- MS in accounting and financial management/MS in management—financial management specialization
- MS in accounting and financial management/Master of International Management—financial management track

Executive Programs

- Executive Master of Business Administration (21-month face-to-face program enhanced with online assignments)
- Executive MS in information technology
- Executive MS in technology management
- Executive Certificate for Chief Information Officers (CIO)
- Executive Certificate in the Strategic Management of Technology and Innovation

Executive Dual Degrees

- Executive Master of International Management/MBA
- Executive MS in management/MBA
- Executive MS in technology management/MBA

Plus, more than 35 graduate certificates.

* Offered on-site and online.

Institute for Global Management

The Institute for Global Management (IGM) conducts research and provides training on topics central to the management of international enterprises. IGM offers customized seminars and consulting services and engages in applied research on topics that prepare managers for the effective conduct of international business. IGM's priorities include leadership development in transnational organizations; technology management (particularly the information systems of transnational corporations); and corporate responsibility (with special emphasis on global environmental issues, technology transfer concerns, and localization of management).

Students may obtain further information from the director of the Institute for Global Management by phone at 301-985-7200 or by e-mail at *cmann@umuc.edu*.

National Leadership Institute

The National Leadership Institute (NLI) is part of University of Maryland University College's Graduate School. NLI is also a network associate of the Center for Creative Leadership® (CCL), recognized worldwide as the preeminent organization devoted to leadership and leadership education research.

NLI clients are individuals and organizations seeking development of their leadership skills and abilities. The motivated executives and high-potential managers who enroll in an NLI program—or request a custom-designed program for their company—typically do so because they require stronger leadership proficiency at better governing their employees, their organizations, and themselves. The organization encourages a positive transformation within the industry and the employees.

Participants will be provided a comprehensive assessment of their leadership skills and perspectives, learn how their behavior impacts others, engage in experiential exercises that reinforce ideal leadership patterns and behaviors, and will leave the program with an understanding of their strengths and weaknesses and with a workable leadership development plan.

NLI's wide-range of leadership development services include:

- The Leadership Development Program® (LDP)
- The Foundations of Leadership (FOL)
- Online Leadership Assessment Program (OLAP)
- Custom-designed programs
- Conferences on leadership
- Executive coaching

For more information, call 301-985-7195 or 877-999-7195 to speak to the Business Development Office, or send e-mail to *nli@umuc.edu*. Visit the Web site for schedule, registration, and pricing information at *www.umuc.edu/nli*.

Federal GSA *Third Millennium Network*

The Graduate School was selected by the General Services Administration (GSA) to participate in the federal *Third Millennium Network* (formerly the *1,000 By the Year 2000 program*). The purpose of this program is to prepare today's information resource managers to meet the challenges of rapidly changing technology and of increased demand for government services.

To complete the program, students must take three courses and one elective in the Master of Science in computer systems management, information resources management (IRM) track. Two other electives are to be selected from a variety of technical and technical-management courses in the Master of Science in computer systems management or Master of Science in telecommunications management programs, or the Master of Science in management, management information systems track. Upon completion of their studies, students receive a document of completion from UMUC; federal employees may also receive a *Third Millennium Network* certificate from GSA. Students may elect to finish their Master of Science in computer systems management degree by completing 18 more credits. Students interested in this opportunity should call a Master of Science in computer systems management advisor for further details at 301-985-4616.

Partnership with National Defense University

In 1995, the UMUC Graduate School formed an alliance with the National Defense University Information Resources Management College (IRMC). The purpose of this alliance is to expand academic opportunities by combining coursework from IRMC's Advanced Management Program and the Chief Information Officer Certificate Program with the Graduate School's technical track and capstone courses.

To complete this program, students combine 15 semester hours of coursework from IRMC with 21 semester hours from UMUC to receive either a Master of Science in computer systems management or a Master of Science in telecommunications management degree. Students must apply to and meet the established admissions guidelines for the above programs. Interested students are referred to IRMC.

Partnership with Naval War College

UMUC, in partnership with the Naval War College (NWC), offers the NWC nonresident seminar students a Master of Science in management (MSM) with a specialized track in Naval Operations and National Security. This program is available only to current NWC nonresident seminar students.

UMUC will accept 19 of the 20 graduate credits awarded by NWC upon successful completion of the nonresident seminar program. Credits will be transferred in as a track in Navy Operations and National Security. An additional 18 core credits must be completed, along with three end-of-program breadth credits for a total of 39 credits to receive the MSM. For more information on this program, call 800-888-UMUC, 240-582-2565, or send an e-mail to *brnwc@info.umuc.edu*.

Oldenburg University

The Master of Distance Education degree is offered in partnership with Carl von Ossietzky University of Oldenburg, Germany, a leading institution with extensive experience in distance education. Oldenburg University is

contributing a certificate and several courses to this program, all of which earn full credit in the master's program. Oldenburg's participation helps to ensure that the program has a broad global perspective that is critical for distance educators today.

Office of Distance Education and Lifelong Learning

The Office of Distance Education and Lifelong Learning (ODELL) conducts research and advocates data-based improvements in design and delivery of distance learning programs, demonstrates innovative practices in distance education and lifelong learning, and helps build a distance education practice community within and outside of UMUC. Three components of ODELL, the Center for Teaching and Learning (CTL), the Institute for Research and Assessment in Higher Education (IRAHE), and the Institute for Distance Education (IDE), are listed below.

Center for Teaching and Learning

UMUC's Center for Teaching and Learning (CTL) coordinates faculty development and intensive training in distance education, course development, and prior learning assessment for UMUC faculty, and collects and analyzes data on student and faculty satisfaction with courses and curricula.

Institute for Distance Education

The Institute for Distance Education (IDE) is a resource to the University System of Maryland (USM) community which fosters the highest possible quality in design, development, delivery, and evaluation of distance education programs to meet the needs of learners throughout the state. The Institute facilitates the sharing of distance education resources and expertise across the USM institutions and with other agencies at the state, regional, and national level. The Institute has an advisory role to the Chancellor in the development and implementation of interinstitutional distance education policies. More information on IDE can be found on the Web site located at *www.umuc.edu/ide*.

Institute for Research and Assessment in Higher Education

The Institute for Research and Assessment in Higher Education (IRAHE) seeks, through research, to generate knowledge that will lead to improvements in higher education for adults. IRAHE's research and action programs enable UMUC and partner institutions to achieve immediate improvements through the implementation and evaluation of new practices.

IRAHE's initial research projects, funded by grants from The Pew Charitable Trusts and an anonymous donor, have been directed toward achieving equity of access and success for students of color (the Diverse Students Program) and making the delivery of college-level learning more efficient both for students and for higher-education institutions (the Effectiveness in Learning Program). While the focus of IRAHE's research is on serving the needs of adult, part-time students, its findings can be used to advantage by colleges serving younger students as well. IRAHE disseminates its findings among other institutions of higher education and interested individuals. IRAHE may be reached by calling 301-985-7031 or by sending an e-mail to *irahe@listserv.umuc.edu*. Information can also be obtained by visiting IRAHE's Web site at *www.umuc.edu/distance/odell/irahe*.

Career and Cooperative Education Center

The Career and Cooperative Education Center (CCEC) at UMUC serves all UMUC undergraduates, graduates, and alumni lifelong and worldwide. It also serves the employer community by preparing self-aware employees who know their strengths, skills, values, and uniqueness, and where they might potentially fit in today's global marketplace.

Many services are offered by the CCEC to assist students and alumni to explore and achieve their academic and career goals and gain the skills needed to be self-sufficient in pursuing them.

Programs and services include: career counseling assistance online, by phone, and in person; online résumé posting; access to online job postings; online job matching; online resources and links for career decision making and development; online and in-person career assessment; interview preparation; job fairs; and computer access.

Workshops and other career-related topics are offered by the CCEC. Students and alumni may visit the center, which is located in the Student & Faculty Services Center (SFSC) in Adelphi, MD, in room 2270. They may also take advantage of the CCEC online by visiting *www.umuc.edu/careercenter*, by calling 301-985-7780, or by sending an e-mail to *coop@info.umuc.edu*.

Undergraduate Programs

Undergraduate Programs is supported by a full range of student services. Information may be obtained from Undergraduate Programs at 301-985-7000 or by e-mail at *umucinfo@umuc.edu*. Information can also be obtained by visiting the Undergraduate Programs Web site at *www.umuc.edu/ugp*.

Graduate Certificate Programs

UMUC's certificate programs offer a convenient, flexible way to develop valuable new skills. In as few as 12 semester hours, you can earn a certificate in the area you desire. The graduate certificate programs require from 12 to 24 semester hours with a minimum GPA of 3.0. Only one grade of "C" is allowed. Certificates are awarded upon successful completion of the required coursework.

The admission process is the same for the certificate programs as it is for the degree programs. For assistance with the admission process, call Graduate Student Affairs at 301-985-7155 or 800-888-UMUC, ext. 7155, or send an e-mail to *certificates@umuc.edu*.

Library Services

UMUC's Information and Library Services (ILS) promotes the use of library technology and resources, teaches library research classes, and provides access to a variety of library resources on the ILS Web page at www.umuc.edu/library. UMUC reference librarians are located in Room 2255 of the Student and Faculty Services Center in Adelphi and at the McKeldin Library on the College Park campus. Reference librarians also are available to assist students via e-mail, telephone, Web-based conferencing, and interactive chat.

Resources that currently enrolled students can access through the Web page include the online catalog of the University System of Maryland (USM), tutorials on how to conduct research, and approximately 100 databases in the MdUSA system. More than half of these databases provide full text articles, covering a variety of academic disciplines including business administration, management, computer science and information technology, health, education, social sciences, and arts and humanities.

ILS also provides students with instruction in finding and using library resources. The Peck Virtual Library Classroom is available within WebTycho as an additional free resource for students who want to improve their research skills.

Currently enrolled students have borrowing privileges at all USM libraries, Morgan State University, and St. Mary's College of Maryland. Students also are encouraged to make use of library resources in their residential areas, including community colleges and other libraries. The USM online catalog is available from the ILS Web page at *www.umuc.edu/library* or through WebTycho. To borrow USM materials, students must have a current semester sticker and barcode on their UMUC student ID card. (The current sticker is included with the registration packet each semester.) USM library materials can be delivered for pickup at any of the USM libraries (including the Shady Grove Center) or UMUC circulation sites at the Annapolis Center and Waldorf Center for Higher Education. UMUC students who reside outside the state of Maryland and within the continental United States may have books sent to the address on file. In addition, through interlibrary loan (ILL), all UMUC students can request any journal articles or book chapters that are not available in full text online be mailed or sent to them electronically in PDF format via the Web.

If you have any questions about these or other library services or resources, please call 301-985-7209 (or toll free to 800-888-UMUC, ext. 7209).

Department of Defense Relations

Department of Defense Relations (DoD Relations), a separate division of Military Outreach, is responsible for the "passport" initiative to retain current servicemember students, especially those transitioning from the Asian and European operations. It also accelerates marketing to service members throughout the United States. Please call 301-486-1437 for further information.

Regional Outreach

Regional Outreach encompasses central, eastern, and western Maryland and pursues an array of enhanced services and functions to serve UMUC students, faculty, and alumni at regional centers and sites, and engage proactively in community outreach with local organizations and community colleges. For further information, call 301-870-6013.

Capitol College Agreement

UMUC and Capitol College have an academic agreement to allow students from either school to transfer one preapproved course into his or her electronic commerce degree program. UMUC's Master of Science in electronic commerce students have the choice to transfer one Capitol College Master of Science in electronic commerce management course to UMUC as an elective in the MSEC program and vice-versa. For more information on this arrangement, contact Robert Ouellette at 301-985-7824.

Alumni Association

The UMUC Alumni Association was established in 1990 to support, enhance, and promote UMUC and its community of alumni and students worldwide. The Alumni Association reaches out to all members of the UMUC community with opportunities to become involved in association activities as well as professional and personal development seminars and workshops.

With a membership of more than 80,000 alumni, the association offers programs and services that are beneficial to both alumni and students. In addition to funding scholarships for UMUC students, the association seeks to encourage alumni and students to participate actively in the UMUC community by attending events, volunteering, and staying connected to their alma mater in ways that contribute to its success.

Membership in the UMUC Alumni Association is automatic upon graduation—there are no applications or fees. Following are just a few of the benefits of being a UMUC alumnus:

- Regular issues of the *Achiever* alumni magazine.
- UMUCstart.com, a free Internet portal created exclusively for UMUC alumni and students.
- Eligibility to apply for an Alumni Association Affinity credit card.

- Discounted GEICO automobile insurance.
- Networking opportunities and access to career resources.

More information about the UMUC Alumni Association is available online at www.umuc.edu/alum, by contacting the Alumni Relations office at 301-985-7179, or by sending an e-mail to *alumni@umuc.edu*. Student inquiries are always welcome.

Shared Governance

In accordance with Board of Regents I-6.00 Policy on Shared Governance In the University System of Maryland, UMUC has developed a new worldwide shared governance structure. Each of the three primary stakeholder groups—students, faculty, and staff—of UMUC has an advisory council consisting of elected representatives. These councils advise senior UMUC leadership on broad issues related to the university's strategic planning, communications, academic initiatives, and other issues. Further, there is a University Advisory Council, made of representatives from each of the three stakeholder councils, to advise and assist the President of UMUC.

Student Advisory Council (STAC)

The Student Advisory Council consists of 12 student representatives from UMUC locations worldwide as well as undergraduate and graduate representation.

STAC representatives serve on the overall University Advisory Council, the Graduate Council as well as the Undergraduate Curriculum Committee.

The student advisory council provides senior management with critical input on a wide variety of institutional initiatives that effect students and student life at UMUC. To learn more about STAC or contact your representative visit our Web page at *www.umuc.edu/gov/stac*.

Policies and Procedures

Tuition and Fees

All graduate students are required to pay graduate tuition for all graduate courses in which they are enrolled. Refer to *www.umuc.edu/policy* for information on the current policy in effect at time of printing.

Standard Master's Degree Programs

Visit the UMUC Graduate Web site at *www.umuc.edu/tuition* for current tuition rates.

A nonrefundable fee of $50 is due when a student applies for admission to the Graduate School. A late fee of $30 is assessed when a student registers after the stated deadlines.

Note: Tuition for active-duty military and their spouses is the same as tuition for Maryland residents. Dependent children of full-time, active-duty members of the U.S. Armed Forces who reside in or are stationed in Maryland have in-state status. To be classified as a resident, the applicant must provide a copy of military orders.

Executive Graduate Programs

A nonrefundable fee of $50 is due when a student applies for admission to the Graduate School. A deposit of $500 is due upon acceptance into an executive program of study. Visit *www.umuc.edu/tuition* for information on Executive Programs' tuition.

For dual degrees offered through Executive Programs, contact the Office of Executive Programs at 301-985-7069 or visit *www.umuc.edu/grad/exec*.

Note: Neither tuition remission for University System of Maryland employees nor tuition remission under the Golden ID program may be used for the executive graduate programs. Tuition and fees are those in effect at time of publication, but are subject to change.

Doctor of Management

A nonrefundable $100 fee is due upon application to the Doctor of Management (DM).

Tuition for the DM program varies according to the level of the coursework in which the student is enrolled. DM students enrolled in courses at the "600" level (courses that are open to both doctoral and master's students) pay the prevailing graduate tuition rate for those courses (see *www.umuc.edu/tuition* for current tuition information). Tuition for the doctoral seminars, which are the "700" level (open only to doctoral students), is the prevailing doctoral rate. Visit *www.umuc.edu/tuition* for information on the Doctoral program's tuition.

Note: Neither tuition remission for University System of Maryland employees nor tuition remission under the Golden ID program may be used for the Doctor of Management's "700" level courses. Tuition remission for University System of Maryland employees or tuition remission under the Golden ID program may be used for the Doctor of Management's "600" level courses. Tuition and fees are those in effect at time of publication, but are subject to change.

Other Fees

Other fees applicable to UMUC students are: per credit technology fee ($5), schedule adjustment ($15), withdrawal ($15), and late registration ($30), regular transcript service ($5), rush transcript service ($15), and replacement ID card ($10). For elective or prerequisite courses taken at other institutions, students will pay tuition in accordance with the amount charged by the institution in which these courses are offered.

Monthly Tuition Payment Plan

UMUC offers a cost-effective alternative for students who are budgeting for college tuition: an interest-free, monthly tuition-payment plan. This plan allows students to spread all or part of their tuition bills into monthly installments on a

semester basis. All UMUC students are eligible to participate in the payment plan, regardless of financial need. For complete information, visit *www.amsweb.com* or call Academic Management Services (AMS) at 800-635-0120.

Tuition Remission

The current USM Tuition Remission policy allows employees to register for 7 credits per semester with free tuition. Employees enrolled in a program that schedules two seminars for the same enrollment period are responsible for credits which exceed the 7-credit limit.

For instance, if two MBA seminars are scheduled for the same semester, USM Tuition Remission will cover only one of the seminars since two seminars exceed the 7-credit limit.

Refund Policy

The official date used to determine a refund is either the date the withdrawal form is filed in the office of Records and Registrations or the postmark or e-mail date on a written request. The official date for federal financial aid recipients is the last date of class attendance as determined by federal regulations. Withdraw requests must be made in writing or done via IRIS or ISIS.

Note: Students in their first enrollment period with UMUC, who are receiving financial aid (grants, work-study, or loans) and withdraw from the institution (not merely from a course) before completing 60 percent of the enrollment period for which they have been charged, are subject to a new federal pro-rata refund policy. Financial aid counselors can provide further information.

Refund for Course Cancellations

The university refunds 100 percent of tuition and registration fees for courses canceled by the university. The application fee is nonrefundable, even when a course is canceled.

Refund for Student Withdrawals (Fall/Spring)

Tuition is refunded as follows:

100%	from the date of registration until the first class meeting
75%	from the first class meeting until the third class meeting
50%	from the third class meeting until the fourth class meeting
25%	from the fourth class meeting until the fifth class meeting
0%	from the day of the fifth class meeting

Refund for Student Withdrawals (Summer)

Tuition is refunded as follows:

100%	from the date of registration until the first scheduled class meeting
75%	from the first scheduled class meeting through the following week
50%	from a date one week from the first class meeting through the following week
25%	from a date two weeks from the first class meeting through the following week
0%	after the third week of class

The application and change in registration fees are not refundable. A $15 withdrawal processing fee is deducted from the 100 percent refund. The official date used to determine a refund is either the date the withdrawal form is hand-delivered to the Information Desk at the SFSC, the date and time of the e-mail to *gradinfo@umuc.edu*, or the postmark date on a mailed request. Business hours are Monday through Friday, from 8:30 a.m. to 5 p.m.

Note: This policy applies only to students not receiving federal financial aid.

Note: For distance education courses, "scheduled weeks" are considered to start on the first day of the semester and run for one week periods in succession.

Academic Calendar

The Graduate School conducts many courses and programs each semester, scheduling them to meet at times and places convenient to students. Because of the variety of sites and programs offered and the changes made after this catalog is published, the dates indicated below are approximate.

Approximate Class Schedule

Summer	First week in June to third week in July
Fall	End of August to mid-December
Spring	Fourth week in January to mid-May

Actual times, dates, and locations may be found in the *Graduate Schedule of Classes*, which is published each semester and is available by calling 240-582-2565 or 800-888-UMUC, ext. 2565, sending a fax to 240-582-2575, sending an e-mail to *gradschool@info.umuc.edu*, or visiting *www.umuc.edu/graddates.html*.

Services for Students with Disabilities

Graduate students with disabilities who plan to enroll at UMUC should contact the technical director for Veteran and Disabled Student Services on the staff support team. Students must register and request services each semester. Students must submit current (within three years) documentation of a disability. Documentation may include one or more of the following records from a qualified medical, psychological, or educational professional: secondary school records, medical or psychological reports and diagnosis, and aptitude and achievement results and evaluations. The documentation must show a relationship between a disability and the request for services. To allow for adequate planning, students should register and request services 4 to 6 weeks before the first day of classes. For more information, call 301-985-7930 (301-985-7466 TTY) or visit *www.umuc.edu/studserv/dss.html*.

Financial Aid

Financial aid is intended to meet the financial needs of the student who otherwise could not or would not consider continuing their education. Students who receive financial aid must not only demonstrate financial need, but must also make satisfactory progress as determined by UMUC in accordance with Federal Regulations.

Financial aid recipients are required to be in good standing and to maintain satisfactory academic progress toward their degree requirements for each semester/term in which they are enrolled. Satisfactory academic progress, as described below, is evaluated twice each year, in January and July. Failure to maintain satisfactory progress, as described below, may result in cancellation of financial aid awards, and the student may have to repay any funds already received.

Basic Standards for Graduate Students

UMUC's institutional requirements for minimum satisfactory performance for financial aid recipients are defined as follows:

1. Minimum cumulative grade-point average (GPA). Graduate students must maintain a minimum cumulative GPA of 3.0.

2. Minimum passing grade. The minimum passing grade for a graduate student is a B grade for each course. A student may not receive a grade of C or below for a course in the most recent semester of enrollment and be considered to meet the minimum academic standards.

3. Minimum cumulative completion rate. Graduate students must maintain a minimum cumulative completion rate of two-thirds of credits attempted (67 percent).

4. Federally mandated maximum timeframe to complete the program/degree. The student must complete his or her educational program within a time frame no longer than 150 percent of the published length of the educational program (for example, complete his or her program after attempting a maximum of 54 credits for a 36-credit program). Federal regulations require that we track the academic progress of financial aid recipients from the first date of enrollment at UMUC, whether or not financial aid was received. Credits transferred from all other credit sources will be considered as attempted and completed credits in the evaluation of the completion rate standards.

Students whose attempted credits, including transfer credits, exceed the 150 percent timeframe for any reason will be placed on Financial Aid Denied status, not Financial Aid Probation. No financial aid will be disbursed for the student during subsequent semesters/terms unless the student has made an appeal of the Financial Aid Denied and the appeal is granted.

Treatment of W, I, AU, F, & S Grades, No Grade Reported, and Repeated Course Work

1. Course withdrawals (W) after the drop/add period are not included in the GPA calculation, but are considered a non-completion of attempted course work.

2. Incomplete (I) grades are not included in the GPA calculation, and are considered a non-completion of attempted course work until the Incomplete grade is replaced with a permanent grade and academic progress can be re-evaluated.

3. An audit (AU) grade is not considered attempted course work. It is not included in the GPA calculation or completion rate determinations.

4. A satisfactory grade (S) is treated as attempted credits which are earned, but is not included in calculation of GPA.

5. F-grades will be treated as attempted credits that were not earned, and so will be included both in the calculation of GPA and minimum completion rate.

6. If no grade is assigned, for any reason, it will be treated as an "I" grade in determination of satisfactory academic progress.

7. The highest grade earned in a course that is repeated will count in the GPA computation, but every repeated attempt will be included in the completion rate determinations. No financial aid can be disbursed for a repeated attempt if the student already has achieved a passing grade for that course, and UMUC's policy only allows students to receive aid for one repeat of a course.

Graduate Student Financial Aid Programs

Federal

Federal Perkins Loan
- Interest rate—5 percent
- Eligibility—Degree-seeking students; U.S. citizens
- Amounts—Variable
- Determination—Based on financial need and available funding
- Application—FAFSA* and UMUC application material

William D. Ford Federal Direct Loan Program
- Direct Loan subsidized and Direct Loan unsubsidized
- Interest rate—Variable but no higher than 8.25 percent
- Eligibility—Degree-seeking students enrolled at least half-time (6 semester hours in fall and spring, 3 semester hours in summer)
- Amounts—$18,500 per year (not to exceed the student's cost of attendance)
- Determination—Regardless of income, but federal government only pays interest on need-based loans
- Application—FAFSA and UMUC application material

State

Senatorial Scholarship Program
- Eligibility—Degree-seeking students
- Amounts—$400–$2,000 per year
- Determination—Awarded by state senators
- Application—FAFSA and Maryland Financial Aid Form (FAF), due March 1

Delegate Scholarship Program
- Eligibility—Degree-seeking students
- Amounts—Vary
- Determination—Awarded by state delegates
- Application—Students apply directly to their delegates in Maryland; deadline set by delegate

*Information, financial aid forms, and a link to the FAFSA form are available at *www.umuc.edu/financialaid*.

Financial Aid Probation Status

Graduate students who fail to meet the minimum 3.0 cumulative GPA standard or fail to complete at least two-thirds of cumulative credits attempted or who receive a grade of "C" or below for a course in the most recent semester of enrollment will be placed on Financial Aid

Probation for the subsequent semesters/terms of enrollment until the next evaluation of SAP (January and July). Financial aid can be received during the semesters/terms of probation. Financial aid disbursements for the next period of enrollment will be held until the grades and course completions have been reviewed for the semesters/terms of Financial Aid Probation.

Students receiving financial aid for the first time will be placed on Financial Aid Probation if they do not meet the minimum grade-point average or course completion standards as noted in this policy in a previous semester/term of enrollment at UMUC.

Financial Aid Denied Status

Students who, while on Financial Aid Probation or on Financial Aid Denied status, fail to maintain the minimum completion rate of 67 percent and/or fail to maintain a minimum cumulative GPA of 3.0 or better, will be placed on Financial Aid Denied status for subsequent semesters/terms of enrollment. No financial aid will be disbursed during subsequent semesters/terms until the student is removed from Financial Aid Denied status.

Students who fail to satisfy the 150 percent requirement will also be placed in Financial Aid Denied status. No aid will be disbursed during subsequent semesters/terms unless the student has made an appeal and the appeal is granted for that semester/term. There are no exceptions to this requirement. Students in a 36-credit master's degree program who have attempted in excess of 54 credits including transfer credits are no longer eligible for financial aid. There is no probationary period, once you have exceeded the 150 percent standard.

Reinstatement of Aid After Financial Aid Denied Status

Reinstatement of financial aid after a student is placed in Financial Aid Denied status is achieved in one of the following ways:

1. The student submits a written letter of appeal in accordance with the appeal process and the Financial Aid Appeals Committee grants the appeal. The student is placed on Financial Aid Probation for the semester/term rather than in Financial Aid Denied status.
2. The student attends UMUC, pays for tuition and fees without the help of student financial aid, and does well enough in the course work to satisfy all the satisfactory academic progress standards. The student regains aid eligibility in a probationary status. Students who are in Financial Aid Denied status for failure to meet the 150 percent requirement cannot regain eligibility this way. Students whose attempted credits have exceeded 150 percent of their program cannot regain financial aid eligibility except on a semester by semester or term by term basis through the appeals process.

Appeal Process

The student must submit an appeal of Financial Aid Denied status in writing to the Associate Director of Financial Aid by the date specified in the Financial Aid Denied notification letter. The Financial Aid Appeals Committee will review the appeal and notify the student in writing of their decision within 14 working days after the Appeals Committee meets and makes its determination.

General Eligibility Requirements

Eligible applicants for UMUC need-based assistance must:

- Be admitted to UMUC as a degree-seeking student.
- Be a U.S. citizen or classified as an eligible noncitizen.
- Be enrolled half-time (6 credits during the fall and spring semesters and 3 credits during the summer enrollment period) for the federal student loan and state scholarship programs and be enrolled in 3 credits for the institutional aid programs. Audited courses and some repeated courses cannot be counted.
- Demonstrate satisfactory academic progress towards a degree according to UMUC policy.
- Possess a valid Social Security Number.
- Register with Selective Service, if required to do so.
- Not be in default on any federal student loans, nor have borrowed in excess of loan limits, nor owe a refund or

repayment on any grant under Title IV federal student aid programs.

- Not be ineligible based on a drug conviction.

U.S. Federal Financial Aid Programs

Most aid programs are available to both full- and part-time students. UMUC offers several kinds of aid, including grants, scholarships, work study, and loans. In most cases, at least half-time enrollment (6 semester hours) is required.

Amounts and eligibility for financial aid vary from year to year. Following is a brief description of amounts likely to be available for the 2002–2003 award year.

Grants and Scholarships

Gift assistance, for which no repayment is required, is offered by the State of Maryland and UMUC. The Financial Aid Office administers several types of gift assistance: UMUC scholarships and grants, and Maryland State scholarships and grants.

The UMUC President's Grant program offers grant awards to students who demonstrate financial need. Typical awards during the 2002–2003 year range from $100 to $600 per semester, based on need. Since funds are limited, students are urged to apply early.

The UMUC Scholarship programs, which include the UMUC President's Scholarship, offer a number of institutional scholarships as well as scholarships from corporate donors and foundations. A separate scholarship application must be completed for consideration. Requirements vary according to the individual scholarship programs. Typical awards range from $200 per semester to $1500 per semester, depending on the specific program. Most scholarships require a minimum GPA for consideration. Please refer to the *UMUC Scholarship Brochure* for further information.

The Maryland Senatorial and Delegate Scholarship Programs provide financial assistance to Maryland residents and are based on criteria established by the elected official. For graduate students, awards typically require enrollment in at least 6 graduate credits per semester. Award amounts range from $200 to $3000 annually. For more information, please contact the Maryland State Scholarship Administration at 800-974-1024, 410- 260-4565, or TTY 800-735-2258.

Many UMUC students receive private scholarships offered by corporations, associations, foundations, and other organizations that offer awards on a competitive basis to students who meet specific criteria. We encourage students to review all scholarship possibilities through organizations with which you may have an affiliation. Additional scholarship links and search tools are available through our Web site at *www.umuc.edu/financialaid*.

Loans

The loan programs are available to students enrolled in at least 6 graduate credits per semester. Students who borrow loans to pay for college expenses must repay the principal and interest in accordance with the terms of the promissory note.

The Federal Perkins Loan program offers need-based, low-interest federal loans. UMUC is the lender. Award amounts typically range between $500 and $1500 per semester. The current interest rate is 5 percent. Repayment is made to UMUC and begins nine months after the borrower leaves school or attendance drops below half time.

The William D. Ford Federal Direct Loan program offers low interest federal loans to students. Students may qualify

for a subsidized Federal Direct Stafford Loan, which is based on financial need. Students can also borrow an unsubsidized Federal Direct Stafford Loan which is not based on need—that is, regardless of personal or family income level. The federal government pays the interest on need-based Federal Direct Loans, while the borrower is in school or a deferment status. Students with an unsubsidized Federal Direct Loan (not based on need) are responsible for the interest during in-school and deferment periods. The interest rate is variable, but will not exceed 8.25 percent. Interest rates are set each year in June. Loan amounts vary based on grade level and dependency status. Repayment begins six months after a student leaves school or when attendance drops below half time. For annual award amounts and general repayment terms, see the UMUC Guide to Financial Aid at *www.umuc.edu/students/fincaid.html*.

Alternative Student Loan programs are also an option for UMUC students. Students whose financial aid awards do not meet their financial need may be able to borrow up to their cost of attendance from private student loan programs offered by banks and other lenders. These education loans are not federal loans; students borrow directly from and make payments to the lender. Alternative student loans typically require a credit check and often a cosigner. Students with an alternative loan must pay their tuition charges when they register for classes. Registration will not be held pending payment since alternative loan checks are mailed directly to the borrower. There are many lenders who offer alternative student loans. Students who are interested in borrowing an alternative student loan should contact the bank of their choice. For more information, visit *www.umuc.edu/studserv/faaltlon.html*.

Employment Programs for Students

UMUC recognizes the importance of flexible, part-time employment opportunities for students who are in transition or who have financial need. Employment typically involves positions in the university setting, although some community-service positions are available.

The UMUC Student Assistant Program provides an opportunity for UMUC students to work part-time at UMUC and offers a flexible schedule that fits the student's classes. Please contact the Financial Aid Office for more information on the opportunities available.

The Federal Work-Study Program is a need-based program providing job opportunities to assist students in meeting college costs. The amount of award varies according to financial need and availability of funds. Funds are paid on a biweekly basis based on hours worked. Students must apply for and be hired for on campus employment. Students who do not secure on-campus employment forfeit their work study award.

Completing the Financial Aid Application Forms

Students must complete the Free Application for Federal Student Aid (FAFSA) and the UMUC Financial Aid Data Form in order to be considered for any type of financial aid at UMUC. There is no cost to the student to obtain or process these forms. The FAFSA must also be completed for a student to be considered for need-based Maryland State scholarships. The application process can take from 6 to 10 weeks, so students are encouraged to apply early. Please see the *UMUC Guide to Financial Aid* for more information on the application process.

UMUC Financial Aid Priority Deadlines

One of the most important aspects of the financial aid process is to apply for assistance as early as possible. The application deadlines listed on this page are priority deadlines. Students meeting these dates will have the opportunity to be considered for the various grant and scholarship programs with limited funds available. Students meeting the priority deadlines will enjoy the security of having their award authorizations ready for registration. Students who do not meet these deadlines may not receive their financial aid in time for registration.

Students who apply late may still receive aid, depending on their eligibility and the availability of funds. Late applications are processed continually throughout the award year, so students are always encouraged to apply. Eligibility for both loans and grants can be authorized even after the semester has begun.

Students who wish their applications for financial aid to receive high priority, and who want their eligibility to be determined early enough for funds to be reserved by registration should complete both their Free Application for Federal Student Aid (FAFSA) and the UMUC Financial Aid Data Form by the priority deadlines shown at the top of the next column:

Enrollment Period Being Applied For	*Priority Deadline for Filing Financial Aid Forms*
Maryland State Scholarships	March 1
Full Academic year or Fall Semester only	June 1
Spring Semester only	November 1
Summer Semester	April 1

Federal Return of Funds Policy

Students receiving federal financial aid have the responsibility to follow the college's withdrawal procedures as outlined on page 15 of this catalog. The 1998 Reauthorization of the Higher Education Act requires the university to calculate a Return of Title IV funds on all federal financial aid students who withdraw from all classes on or before the 60 percent attendance point in the semester. UMUC is required to return to the federal programs any award funds which were "unearned" based on the percentage of attendance. Students who stop attending all classes without officially withdrawing will also be subject to a Return of Funds calculation at the end of the semester based on the last documented date of attendance as determined by the instructors.

A pro-rata schedule is used to determine the percentage of the semester the student attended based on the withdrawal date/last date of attendance. The number of days counted includes all calendar days in the semester, excluding college breaks which exceed four days in length.

Calculation for the percentage of a semester the student attended is:

$$\frac{\text{Number of days in attendance}}{\text{Number of days in semester}} = \text{Percentage of a semester the student attended}$$

The percentage of the semester attended is used to calculate the amount of the student's earned versus unearned federal aid funds. If a student attends 4 weeks of a 16-week semester, then that student has attended 25 percent of the semester and 25 percent of the federal aid received has been "earned." This means that 75 percent of the semester was not attended; therefore, 75 percent was "unearned" and needs to be returned to the federal program(s).

The unearned portion of federal aid funds received must be returned to the appropriate aid program(s) in accordance with the order of return of funds as mandated by law. The order of return is: Federal Unsubsidized Loan, Federal Subsidized Loan, Federal PLUS Loan, Federal Pell Grant, Federal SEOG Grand, other Title IV Aid.

UMUC is required to return the lesser of the Unearned Title IV Aid or the Unearned Institutional Charges. The student is responsible for returning any difference owed if the Unearned Institutional Charges are less than the Unearned Title IV Aid. Unearned Institutional charges are calculated by multiplying the percentage of the semester which was not attended times the student's tuition and fee charges. Per federal regulations, UMUC is responsible for its return of funds first, followed by the student's return of funds. The student is responsible for returning:

Amount of Unearned Title IV Aid Minus (-) Amount of Aid School Returns
= Amount Student returns

If a student is required to return Title IV funds to a federal loan program the loan may be repaid in accordance with the existing terms of the loan program. If the student is required to return federal grant aid, the law allows for the student to repay only 50 percent of the unearned grant money, rather than 100 percent of what's due. Examples of Federal title IV Return of Funds calculations are available in UMUC's Graduate Student Affairs office.

UMUC is required to return its portion of unearned Title IV to the appropriate federal program within 30 days from the date the student withdrew from classes. Students must return unearned grant aid to UMUC within 45 days from the date the student is notified in writing of the debt. Regulations require that UMUC refer accounts to the U.S. Department of Education (U.S. DOE) if the student fails to pay UMUC within 45 days of notification. In this situation, the student would be considered in an Overpayment Status, and would not be eligible for additional aid at any postsecondary institution participating in Title IV Aid programs until the debt is resolved with the Department of

Education. Students who are reported to the U.S. DOE in an Overpayment Status should contact the U.S. DOE to make payment arrangements to repay the necessary grant funds.

Students receiving financial aid who withdraw from their classes may not receive further financial aid disbursements, may lose some/all of the aid that has already been disbursed to their account, and will be personally responsible for payment of any tuition and fee changes that are due.

Students who stop attending all classes without officially withdrawing will be subject to Return of Funds at the end of the semester based on the withdrawal date/last documented date of attendance as determined by UMUC.

For Further Information

Information and applications are available from the Financial Aid office. All financial aid information and forms are also available at *www.umuc.edu/financialaid*. Students with additional questions should contact a financial aid advisor directly at 301-985-7510, 800-888-UMUC, or send an e-mail at *gradfinaid@umuc.edu*.

Veterans Benefits

The following is a summary of the educational assistance that the U.S. Department of Veterans' Affairs makes available to active-duty military personnel, veterans, and their dependents who are attending UMUC:

- The Post-Vietnam Era Educational Assistance Program (VEAP, Chapter 32) may extend benefits to active-duty personnel and veterans who enlisted in the military after January 1, 1977. Eligible applicants who contributed to an educational fund have their contributions matched at the rate of two dollars for each dollar. (Eligibility to enroll in this program ended on March 31, 1987.)

- The Montgomery GI Bill—Active Duty Educational Assistance Program (Chapter 30) assists students who entered active duty for the first time after July 1, 1985, and agreed to have their pay reduced $100 for 12 months. Veterans must have been honorably discharged; active-duty personnel must have served at least two years.

- Certain veterans and active-duty military personnel who were eligible for educational assistance under the GI Bill (Chapter 34) on December 31, 1989, may become eligible for benefits under the Montgomery GI Bill if they meet specific criteria (available from Graduate Student Affairs) and have some unused entitlement. Other veterans who were voluntarily or involuntarily separated and who elected to participate in Chapter 30 may be eligible. Certain Post-Vietnam Era Educational Assistance Program participants who elected to participate in Chapter 30 may also be eligible.

- The Montgomery GI Bill— Tuition Assistance Top-up is available to students on active duty and approved to use federal tuition assistance, and eligible for Chapter 30, the Montgomery GI Bill. When the military cannot or does not cover 100 percent of the tuition and expenses, a service member can elect to receive his or her benefits for all or part of the remaining expenses. The use of Tuition Assistance Top-up reduces future entitlement to the Montgomery GI Bill. For further information, please visit the Department of Veterans' Affairs Web site at *www.gibill.va.gov*.

- Vocational Rehabilitation (Chapter 31) provides assistance to veterans who have a service-connected disability of at least 20 percent and need vocational rehabilitation.

- The provisions of the Survivors' and Dependents' Educational Assistance Program (Chapter 35) award educational benefits to spouses and children of veterans who either died while in service, died as a result of a service-connected disability, or became totally and permanently disabled as a result of their military service.

- Besides Chapter 35, the Restored Entitlement Program for Survivors also assists dependents. Eligibility for educational benefits under this program is limited to unmarried full-time students between the ages of 18 and 22 whose parent died while on active duty before August 13, 1981, or as a result of a service-connected disability incurred before August 13, 1981.

- Educational assistance through the provisions of the Montgomery GI Bill—Selected Reserve Educational Assistance Program (Chapter 106) may be available to students who have a six-year obligation in the Selected

Reserves that was signed after June 30, 1985. Students who are officers must agree to serve an additional six years beyond their current obligation.

- Benefits awarded under the Department of Defense Educational Assistance Test Program (Sections 901 and 903) are available to veterans whom the department chose for participation from among those who enlisted between November 30, 1980, and September 30, 1981.

Application Procedures

Every educational assistance program requires different paperwork and documentation to process a claim. The application procedures and forms are available on UMUC's Web site at *www.umuc.edu/studserv/vainfo.html*. Students with additional questions should contact Graduate Student Affairs at 301-985-7155, or by e-mail at *gradinfo@umuc.edu*. The Department of Veterans' Affairs processes claims and issues payment directly to students approximately six to eight weeks after UMUC submits the paperwork.

Amounts and Methods of Payment

The amount of money a student may receive from the Department of Veterans' Affairs depends on the educational assistance program the student is eligible for, the number of semester hours the student is registered for, and the length of the semester. This is referred to as a student's training time.

Generally, a graduate student's training time is as follows:

Number of semester hours	*Status*
1 semester hour	1/4 time
3 semester hours	Greater than 1/4 time, but less than 1/2 time (Chapter 30 students receive the 1/2 time rate not to exceed tuition. Chapters 1606, 35 and 32 receive the 1/4 time rate)
6 semester hours	3/4 time
9+ semester hours	fulltime

During the summer session, 3 semester hours equals 3/4 time and 6 semester hours equal fulltime

Graduate students may not receive benefits for any course below the 400-level unless it is required by their department and a letter so stating is approved by the academic department and submitted with their application for benefits. Noncredit courses are not eligible for benefits.

Benefits are paid directly to students and can be used to help pay the costs of tuition and books. Under some educational assistance programs, the amount of money a student receives from the Department of Veterans' Affairs does not cover the costs of tuition and books at UMUC. Students receiving benefits should be prepared to pay their tuition at the time of registration or register for the payment plan by contacting Academic Management Services (AMS) at 800-635-0120 or visiting their Web site at *www.amsweb.com*.

Students' Responsibilities

Students receiving benefits are expected to follow all regulations and procedures of the U.S. Department of Veterans' Affairs while attending UMUC.

At UMUC, all regulations of the U.S. Department of Veterans' Affairs are enforced. Students should be aware of the following requirements and consequences:

- Each student is expected to make satisfactory progress toward a degree or certificate; everyone must comply with the academic standards of UMUC.
- Each student must report all changes in enrollment—including drops, adds, withdrawals, changes to audit, and changes in degree objective.
- Registering for a course and then not attending, or ceasing to attend without officially withdrawing, is a misuse of federal funds that is punishable by law.
- Payment of benefits will be disallowed for any course in which a nonpunitive grade is assigned. Nonpunitive grades are I (Incomplete) and AU (Audit).
- Payment of benefits will be disallowed for repeating a course for which transfer credit has been granted or for which a passing grade of A, B, C, D, P, or S was assigned.

- Payment of benefits will be disallowed for any course that is not a requirement in a student's degree or certificate program.

Tutorial Assistance

Veterans, active-duty military personnel, and reservists receiving funding assistance from the U.S. Department of Veterans' Affairs may qualify for tutorial assistance. Students enrolled at least half time may qualify. Payments are allowed when students demonstrate deficiency in courses that are required for their degree programs.

Work-Study Allowance

Students who are registered at least three-quarters time (9 semester hours of credit) and who need money to attend school may participate in work-study. Recipients of benefits under the provisions of Chapters 30, 31, 32, 35, and 106 may be eligible. Students may work up to 400 hours during a semester and receive either the federal minimum wage or the state minimum wage, whichever is greater.

Rules and Regulations

Unless specifically noted, the general academic policies of UMUC apply. UMUC policies can be found at *www.umuc.edu/policy*.

Attendance

Students are expected to attend all on-site or online classes and any related activities regularly and punctually. Attendance in itself is not a requirement for successfully completing a course.

Students who are absent from class retain responsibility for completing any missed coursework, as indicated in the course outline. Students are also responsible for obtaining information about each class session, including any announcements and assignments they missed. Failure of the student to complete any required coursework as scheduled may adversely affect the grade earned. Faculty are not expected to repeat material that a student missed because of absence.

Students who are not officially registered for classes are not permitted to sit in on classes.

Academic Jeopardy

Graduate students are required to maintain a 3.0 GPA at all times. Academic jeopardy is a temporary status in which degree-seeking students have the opportunity to restore their GPAs to 3.0. There are three instances when a degree-status student is in academic jeopardy: when the GPA has fallen below 3.0 for the first time, when a second "C" is recorded, or when the student receives an "F." Under these circumstances, students are considered to be in academic jeopardy and are notified of conditions that must be fulfilled to continue their studies. While in academic jeopardy, a student may not enroll in any course(s) until the course in which a "C" or "F" was earned has been successfully repeated. If enrolled in a course for the next semester, the student will be administratively withdrawn from that course to meet the terms of the academic jeopardy. Provisional students are not eligible for academic jeorpardy.

Note: Please refer to page 22 for additional details on the grade of "C" and academic policies for Doctor of Management students.

A Second Graduate Degree

A student who has completed one master's degree program and wishes to begin a second master's degree program must submit a new application and pay the required application fee. If there are duplicate course requirements between the completed degree and the second program, the student must substitute other coursework, which must be approved by the program director and the dean. Students interested in pursuing a second graduate degree should contact the program director of the second degree program.

Academic Scholarship

According to Graduate School grading policy, the following symbols are used:

A = excellent
B = good
C = passing
F = failure

The grade of "B" represents the benchmark for the Graduate School. It indicates that the student has demonstrated competency in the subject matter of the course. For example, the student has fulfilled all course requirements on time, has a clear grasp of the full range of course materials and concepts, and is able to present and apply these materials and concepts in clear, reasoned, well-organized, and grammatically correct responses, whether written or oral. Only students who meet this standard and who demonstrate exceptional comprehension and application of the course subject matter merit an "A."

The Grade of "C" and Repeated Courses

No more than three credits of "C" may be applied toward the completion of a student's master's degree requirements. Students who are in degree status are permitted one opportunity to repeat any course in which they have earned a grade of "C" or "F." For any course completed with a grade of "F," the one-time option to repeat must be exercised.

Thereafter, no other courses may be repeated. If a student earns a third "C" or an "F" in his/her degree program after repeating a previous course in which a second "C" or an "F" was earned, the student will not be permitted to repeat again and will be academically dismissed.

Degree status students have 12 semester hours in which to establish a 3.0 GPA. After this point, if a grade of "C" in a course causes a student's GPA to fall below a 3.0, the student will be placed in academic jeopardy and must repeat the course in which the "C" was earned, completing it with a grade of "B" or better. While in academic jeopardy, a student may not enroll in any course(s) until the course in which the "C" was earned has been successfully completed.

A master's-level course or seminar, for the purposes of exercising the repeat option, can be for three or more credits. If a degree-seeking student receives a "C" in a 6-credit course within the first 12 credits of coursework, the student is not required to immediately repeat the course unless the student's GPA falls below a 3.0 at or after the 12-credit point of progress. However, any course or seminar worth more than 3 credits in which a grade of "C" is earned must eventually be repeated, as a student cannot exceed three credits of "C" in satisfying degree requirements for graduation.

A final grade of "C" in a course not applied toward degree requirements will not have to be repeated, unless this grade reduces the student's overall GPA to below a 3.0. However, no more than two "C" grades in courses not applied toward degree requirements can be carried through to graduation, regardless of the student's overall GPA.

The option to repeat a course is not permitted for students admitted with provisional status. Therefore, a provisional status student receiving an "F" in his or her first nine semester hours, earning a final grade of "C" in two of the first three courses, or earning a GPA below 3.0 will be academically dismissed. MBA students in provisional status receiving an "F" or "C" in the first seminar will be academically dismissed.

A minimum overall GPA of 3.0 ("B") is required for graduation. Thus, any semester hour of "C" in course work must be balanced by a semester hour of "A."

After a student completes one academic year (12 semester hours), a cumulative GPA of 3.0 will constitute evidence that the student is able to succeed in a graduate program. If, at the completion of one academic year (12 semester hours) or thereafter, a student's cumulative GPA is below 3.0, the student will be subject to dismissal from the Graduate School. Provisional students must have a GPA of 3.0 at the completion of the first 9 semester hours in a program (6 semester hours for MBA students). If students fail to earn that average, they will be dismissed.

A student encountering academic difficulty is expected to seek guidance and counsel from a faculty advisor. UMUC graduate students who have been academically dismissed from one program will not be considered for readmission to any other Graduate School degree or certificate program.

Doctor of Management Students

Students in the Doctor of Management (DM) program are expected to earn a minimum grade of "B" or "S" in every course attempted. This includes any course work at the 600 level (courses open to both master's and doctoral students) used to fulfill DM requirements. For purposes of the DM

program, both "B" and "S" are understood to be equivalent to 3.0 on a 4.0 scale. A DM student who receives a grade of "C" in a course must repeat that course and earn a "B" or better. This option to repeat a course may be exercised only once. A DM student who receives a second "C," or who receives a grade of "F" or "U" in any course, will be academically dismissed from the DM program.

The Grade of "I" (Incomplete)

The grade of "I" is exceptional and given only to students whose completed coursework has been qualitatively satisfactory, but who have been unable to complete all course requirements because of illness or other extenuating circumstances beyond their control. The grade of "I" may be considered only for students who have completed at least 60 percent of the total coursework requirements, in a timely manner, with a grade of "B" or better. The faculty member retains the right to make the final decision on granting the student's request for an "I," even though the student may meet the eligibility requirements for this grade.

It is the responsibility of the student to complete the remaining coursework before the agreed-upon deadline. If the student does not meet the deadline, or if the remaining work has not been completed within six months of the last day of the term during which the course was attempted, the grade will be converted to an "F." Graduate faculty may not issue a terminal "I" grade.

Notice of grade changes must reach the Operations Team no later than six months after the last day of the term during which the course was attempted. The faculty member may change an "I" grade by submitting a Change of Grade form or by changing the grade via IFIS. The Operations Team will notify each student who has been given an "I" when the grade change is finalized.

The Grade of "W" (Withdrawal)

A student who wishes to officially withdraw from a course must use the IRIS system, the ISIS system, fax a request to Graduate Student Affairs at 301-985-7175, or, for those outside the region, must send their request to *gradinfo@umuc.edu*. This must be done no later than two weeks before the official last day of class. The grade of "W" will appear on the official transcript but will not be used in calculating the GPA.

Academic Integrity

Integrity in teaching and learning is a fundamental principle of a university. UMUC believes that all members of the university community share the responsibility for academic integrity, as expressed in the University System of Maryland policy "Faculty, Student, and Institutional Rights and Responsibilities for Academic Integrity." At UMUC, faculty members are expected to establish classroom environments conducive to the maintenance of academic integrity by giving students a complete syllabus describing the course and its requirements, by grading submitted work promptly and adequately, and by arranging appropriate testing conditions, including having faculty members monitor examinations given in class. Students at UMUC are expected to conduct themselves in a manner that will contribute to the maintenance of academic integrity. The University System policy is found at *www.usmd.edu/Leadership/BoardOfRegents/Bylaws*.

Academic Dishonesty and Plagiarism

Academic dishonesty is the failure to maintain academic integrity. Academic dishonesty includes but is not limited to: cheating; fabrication; bribery offered for grades, transcripts, or diplomas; obtaining or giving aid on an examination; having unauthorized prior knowledge of an examination; doing work for another student, presenting another student's work as one's own; and plagiarism.

Plagiarism is the presentation of another person's idea or product as one's own. Plagiarism includes but is not limited to the following: copying verbatim all or part of another's written work; using phrases, charts, figures, illustrations, or mathematical or scientific solutions without citing the source; paraphrasing ideas, conclusions or research without citing the source; or using all or part of a literary plot, poem, film, musical score or other artistic product without attributing the work to its creator.

Students can avoid unintentional plagiarism by carefully following accepted scholarly practices. Notes taken for papers and research projects should accurately record sources of material that are cited, quoted, paraphrased or summarized, and papers should acknowledge these sources in references.

Additional information on UMUC's policy on Academic Dishonesty and Plagiarism may be viewed at *www.umuc.edu/policy*.

Grievance/Appeal Procedure

Students having legitimate complaints about Graduate School faculty, staff member, academic departments, or administrative units should contact the appropriate program director. For information on the procedure to file a formal complaint about the actions of a faculty or administrative staff member, students should contact the Office of the Dean of Graduate Programs and Vice Provost of Academic Affairs at 301-985-7200 or 800-888-UMUC, ext. 7200. Additional information on UMUC's Student Grievance Procedures may be viewed at *www.umuc.edu/policy*.

Nondiscrimination

UMUC is committed to ensuring that all individuals have equal access to programs, facilities, admission, and employment without regard to personal characteristics not related to ability, performance, or qualifications as determined by UMUC and/or System of Maryland policy or by federal, state, or local authorities. The university does not discriminate against or harass any person because of race, religion, color, creed, gender, marital status, age, ancestry, political affiliation, mental or physical disability, sexual orientation, or veteran status (including Vietnam Era Veterans).

For more information on UMUC's policy, refer to *www.umuc.edu/policy/admin04030.shtml*. Information on the Office of Diversity Initiatives may be found at *www.umuc.edu/diversity* or by sending an e-mail to *diversity-initiatives@umuc.edu*.

Policies and Regulations on Student Drug and Alcohol Use

UMUC complies with all federal, state, and local laws that regulate or prohibit the possession, use, or distribution of alcohol or illicit drugs. Violations of such laws that come to the attention of UMUC officials will be addressed through UMUC procedures, or through prosecution in the courts, or both.

All UMUC students are prohibited by UMUC from unlawfully possessing, using, manufacturing, distributing, or dispensing alcohol or any controlled substance on UMUC premises or at UMUC-sponsored activities. UMUC expects all students to comply with applicable federal, state, and local laws and regulations pertaining to possession, use, manufacture, distribution, or dispensation of alcohol and/or controlled substances.

Any student who violates any of the applicable standards of conduct is subject to corrective disciplinary actions and penalties up to and including expulsion from UMUC academic programs and referral to the appropriate state, federal, and/or local authorities for prosecution in the courts.

Program Completion Requirements

In order to be approved for graduation, students must have resolved any outstanding charges of fees or of misconduct and must have complied with the terms of any sanctions. The award of degrees and certificates is conditional upon satisfactory completion of all program requirements and compliance with all UMUC policies.

Transcript Services

To receive an official transcript, the student should mail or fax a signed request to the Office of the Registrar at 301-985-7730.

Disclosure of Students' Records ("Buckley Amendment")

UMUC complies with the Family Educational Rights and Privacy Act of 1974 (also known as "the Buckley Amendment"). The policy of UMUC is (1) to permit students to inspect and review their education records, (2) to provide students the opportunity to seek an amendment of their education records where appropriate, (3) to limit disclosure to others of personally identifiable information from education records without the student's prior written consent, and (4) to provide students with information about how to file formal complaints with the Department of Education.

I. Definitions

A. "Student" means an individual who is attending or who has attended UMUC. It does not include any applicant for admission to UMUC who does not matriculate, even if he or she previously attended UMUC. (However, such an applicant would be considered a "student" for purposes of his or her records relating to that previous attendance.)

B. "Education records" includes records that contain information directly related to a student and that are maintained as official working files by UMUC. The following are not education records:

1. Campus police records maintained solely for law enforcement purposes and kept separate from the education records described above.

2. Employment records, except where a currently enrolled student is employed as a result of his or her status as a student.

3. Records of a physician, psychologist, or other recognized professional or paraprofessional if made or used only for treatment purposes and available only to persons providing treatment. (These records however, may be reviewed by an appropriate professional of the student's choosing.)

4. Records that contain only information relating to a person's activities after that person is no longer a student at UMUC.

II. Inspection and Review of Education Records by Students

A. Right of Access

Each student has the right to access his or her education records, except financial records of the student's parents and confidential letters of recommendation received prior to January 1, 1975.

A student may, by a signed writing, waive his or her right of access to confidential recommendations in three areas: admission to any educational institution, job placement, and receipt of honors and awards. UMUC will not require such waivers as a condition for admission or receipt of any service or benefit normally provided to students. If the student chooses to waive his or her right of access, he or she will be notified, upon written request, of the names of all persons making confidential recommendations. Such recommendations will be used only for the purpose for which they were specifically intended. A waiver may be revoked in writing at any time; and the revocation will apply to all subsequent recommendations, but not to recommendations received while the waiver was in effect.

B. Types and Locations of Education Records; Titles of Custodians of Records

1. UMUC maintains the following types of student records:

a. Permanent academic record cards (hard copy and electronic)

b. Academic data, including application for admission, transcripts from institutions previously attended, unofficial and official evaluations, grade reports, and correspondence concerning the student

c. Financial aid folder

d. Veterans' benefits folder

2. The officials responsible for the maintenance of each type of record are:

a. For UMUC-Adelphi—the Registrar located in Adelphi, Maryland

b. For UMUC-Asia—the Registrar located in Tokyo, Japan

c. For UMUC-Europe (except Mannheim Campus)—the Registrar located in Heidelberg, Germany

d. For the Mannheim Campus—Assistant to the Dean

C. Procedure

Requests for access should be made in writing to the appropriate official. UMUC will comply with a request for access within a reasonable time. In the usual case, arrangements will be made for the student to read his or her records in the presence of a staff member. If facilities permit, a student may ordinarily obtain copies of his or her records by paying reproduction costs. The fee for copies is 50 cents per page. UMUC will not provide copies of any transcripts in the student's records other than the student's current UMUC transcript. Official transcripts (with the seal of UMUC) will be provided for a separate fee.

III. Amendment of Education Records

UMUC provides students with the opportunity to seek correction of their education records.

A. Request to Correct Records

A student who believes that information contained in his or her education records is inaccurate, misleading, or violative of privacy right or other rights may submit a written request to the appropriate official (see Article II, Section B.2, above) specifying the document(s) being challenged and the basis for the complaint. The request is then sent to the person responsible for any amendments to the record in question. Within a reasonable time after receipt of the request, UMUC decides whether to amend the records in accordance with the request. If the decision is to refuse to amend, the student is so notified and advised of his or her right to a hearing. He or she may then exercise that right by written request to the Office of the President.

1. Conduct of the Hearing

All hearings are conducted by an impartial staff member appointed by the University Registrar and Vice Provost, Student Affairs. The student is given a full and fair opportunity to present evidence relevant to the issues raised and may be assisted or represented by individuals of his or her choice at his or her own expense, including an attorney.

2. Decision

Within a reasonable period of time after the conclusion of a hearing, UMUC will notify the student in writing of its decision. The decision is based solely upon evidence presented at the hearing and includes a summary of the evidence and the reasons for the decision. If UMUC decides that the information is inaccurate, misleading, or otherwise in violation of the privacy or other rights of students, UMUC amends the records accordingly.

B. Right to Place an Explanation in the Records

If, as a result of the hearing, UMUC decides that the information is not inaccurate, misleading, or otherwise in violation of the student's rights, UMUC informs the student of the right to place in his or her record a statement commenting on the information and/or explaining any reasons for disagreeing with the decision.

Any such explanation is kept as part of the student's record as long as the contested portion of the record is kept and will be disclosed whenever the contested portion of the record is disclosed.

IV. Disclosures

UMUC will not disclose education records or the personally identifiable information contained therein unless allowed in accordance with FERPA and under the following circumstances:

A. Prior Written Consent

The Custodian of the Records will provide the education records or personally identifiable information contained therein if the student provides prior written consent that the information may be disclosed. The consent must:

1. Specify the records that may be disclosed
2. State the purpose for the disclosure
3. Identify to whom the disclosure is to be made
4. Be signed and dated by the student

At the student's request and expense, a copy of the records disclosed can be provided.

B. Directory Information

1. UMUC designates the following categories of information as directory information:

a. Name

b. Major field of study

c. Dates of attendance

d. Degrees and awards received

e. Previous educational institution most recently attended

2. Directory information is disclosed even in the absence of consent unless the student files a written notice, within three weeks of the first day in which the student is enrolled, informing UMUC not to disclose any or all of the categories. To prevent automatic disclosure of directory information, this notice must be filed annually within the time allotted above, with the appropriate office as indicated in this Policy.

C. Additional Disclosures Without Prior Consent

Prior consent is not required for disclosure of education records in the following circumstances:

1. The disclosure is to other school officials generally within the University System of Maryland or UMUC who have legitimate educational interests.

a. "School officials" includes internal and external instructional or administrative personnel who are or may be in a position to use the information in furtherance of a legitimate educational objective, such as to provide student services.

b. "Legitimate educational interests" include interests directly related to the academic environment.

2. The disclosure is to officials of other schools in which a student seeks to enroll or is enrolled. Upon his or her request and at his or her expense, the student is provided with a copy of the records that have been transferred.

3. The disclosure is to authorized representatives of the Comptroller General of the United States, the Secretary of the U.S. Department of Education, and state educational authorities.

4. The disclosure is to authorized persons and organizations in connection with a student's application for, or receipt of, financial aid—but only to the extent necessary for such purposes as determining eligibility, amount, conditions, and enforcement of terms and conditions.

5. The disclosure is to State and local officials to whom, according to effective state law adopted prior to November 19, 1974, such information is specifically required to be reported.

6. The disclosure is to organizations conducting educational studies for the purpose of developing, validating, or administering predictive tests, administering student aid programs, and improving instruction. The studies shall be conducted so as not to permit personal identification of students to outsiders, and the information is destroyed when it is no longer needed for those purposes.

7. The disclosure is to accrediting organizations for purposes necessary to carry out their functions.

8. The disclosure is to the parent of a student who is dependent for income tax purposes. (Note: UMUC may require documentation of dependent status, such as copies of income tax forms.)

9. The disclosure is to comply with a judicial order or lawfully issued subpoena. Unless expressly prohibited by the subpoena, UMUC will make a reasonable effort to notify the student or parent of the order or subpoena in advance of compliance in order to give them time to seek protective action.

10. The disclosure is in connection with a health or safety emergency.

11. The disclosure is to an alleged victim of any crime of violence, of the results of any disciplinary proceeding conducted by UMUC against the alleged perpetrator of that crime with respect to that crime.

D. Record of Disclosures

UMUC maintains with the student's education records a record of each request and each disclosure, except for:

1. Disclosures to the student himself or herself.

2. Disclosures made pursuant to the written consent of the student (the written consent itself suffices as a record).

3. Disclosures to USM instructional or administrative officials.

4. Disclosures of directory information. This record of disclosures may be inspected by the student, the official custodian of the records, and other officials of UMUC and governmental officials.

V. Right to File Complaint

A student alleging that UMUC has not complied with the Family Education Rights and Privacy Act (FERPA) may file a written complaint to: Family Policy Compliance Office, U.S. Department of Education, 400 Maryland Avenue, S.W., Washington, DC 20202-4605

Code of Student Conduct

In accordance with the Board of Regents Policy V–1.00 Policy on Student Affairs, approved on January 11, 1990, disciplinary regulations are set forth in writing to give students general notice of prohibited conduct. UMUC reserves the right to take appropriate action to protect the safety and well-being of the UMUC community.

Students may be accountable to both civil authorities and to UMUC for acts that constitute violations of law and of this Code. Disciplinary action at UMUC will normally go forward pending criminal proceedings and will not be subject to challenge on the ground that criminal charges involving the same incident have been dismissed or reduced.

To encourage the development and growth of a supportive and respectful academic environment for all students, faculty, and staff, UMUC has created the Code of Civility, which is available at www.umuc.edu and in UMUC publications.

In every case of alleged Code of Conduct violation, the burden of proof rests with the complainant who must establish the guilt of the person accused by clear and convincing evidence. In cases where the complainant wishes to remain anonymous, the burden of proof rests with the administrator.

Additional information on the UMUC Code of Student Conduct may be found at *www.umuc.edu/policy/stud15100.shtml*.

Registration Information

Registration

The registration process at UMUC is designed to be easy and responsive to working adults.

Students may be admitted to only one institution in the University System of Maryland at any one time. Students may be admitted as either graduates or undergraduates, but no one may hold both classifications simultaneously. A student's most recent application for admission invalidates any previous admission.

Note: Graduate students may take both graduate and undergraduate courses concurrently.

Students may be admitted to only one graduate program at any time. Application for admission to a second graduate program is not permitted until notification of resignation has been presented to the first program. Students admitted to any other graduate program in the University System of Maryland must notify UMUC. Students retain active status for one year (two consecutive semesters and the summer trimester) even without being registered in the program. However, after one year without a completed graduate course, students must submit a new application along with another application fee.

Students may withdraw from the Graduate School at any time by writing to Graduate Student Affairs or sending an e-mail to *gradinfo@umuc.edu*. Procedural information and deadlines for withdrawing from a specific class may be found in the current semester *Graduate Schedule of Classes*. UMUC graduate students who have been academically dismissed from one program will not be considered for readmission to any other Graduate School program.

Academic Credit

The standard graduate programs of UMUC are offered on a semester basis with one accelerated summer session. The normal measure of academic work is the semester hour.

Student Success Center

UMUC Phone Representatives are Available All Day, Every Day

Prospective or current students can contact staff in the Student Success Center 24 hours a day, 7 days a week by calling 800-888-UMUC. Prospective students may send inquiries to *gradschool@info.umuc.edu*. Current students may contact advisors at *gradinfo@umuc.edu*.

Call UMUC anytime for answers to all general questions and for help navigating UMUC's Web site. Students who have not been admitted but would like to be on the mailing list for upcoming class schedules or open house invitations may call anytime to give a UMUC representative their contact information.

Prospective Students

Enrollment Specialists Help Get You Started

Applying for admission is fast and easy—especially via the Web at *www.umuc.edu/grad/admiss.html*. An enrollment specialist can answer any questions that may arise regarding admissions and financial aid opportunities, payment options, other student related issues, and can help you register for your first semester.

Current Students

Academic Advisors

After a student's first registration, UMUC advisors will help guide students through all steps that lead to a graduate-level degree or certificate.

Advisors will also recommend ways for the student to complete academic requirements quickly and efficiently. In the local metropolitan area, students have the option of scheduling an appointment with an advisor in person. Advising appointments can be scheduled for the following sites:

Adelphi	301-985-7155
Annapolis Center	301-261-8199
Fort Meade	410-551-0431
Shady Grove Ctr.	301-738-6090
Waldorf Center	301-645-4303

Graduation Services

Advisors are available to answer any questions about requirements for graduation and the application for diploma or certificate.

Each semester hour requires one hour of class attendance on-site or online per week per semester. Most courses carry 3 semester hours. Accelerated programs are offered on a semester basis, each worth 6 to 9 credits.

Course Load

Students are advised to limit their course loads to conform with the demands of their employment and the time they have to prepare for class. A normal load for full-time students, or for those employed no more than 20 hours a week, is 9 semester hours per term. Fully employed students are limited to a maximum of 6 semester hours in the fall and spring semesters, and 3 semester hours during the summer.

Full-time students who are not employed during the summer or who work fewer than 20 hours a week may request to take additional courses (except for MBA) by submitting a request in writing to the Associate Provost, Graduate Student Affairs. Requested exceptions must be made at least one month before the beginning of the semester.

Requirements for Doctor of Management

Requirements for the Doctor of Management are unique. Refer to the Doctor of Management section on page 39.

Time Limit for Degrees

All requirements established for the completion of a degree program must be fulfilled within seven consecutive years (5 years for the MBA). This regulation includes courses transferred from other institutions. Any transfer of credit must be completed within the 5- or 7-year time frame applied toward the degree.

All graduate coursework completed at UMUC in which the student received a grade will be included in the student's overall GPA. It is the cumulative GPA that must meet Graduate School requirements for academic standing and for graduation with at least a 3.0 on a 4.0 scale and no more than one "C" applied toward degree requirements. Graduation requirements for any degree will be those that were in effect in the semester in which the first course within the five- or seven-year time frame was completed.

Time Limit for Certificates

The graduate certificate programs require 12 to 24 semester hours, with a minimum GPA of 3.0 and one grade of "C" allowed.

Certificate programs with 18 credits or less must be completed within three years; certificate programs with more than 18 credits must be completed within five years.

Transfer Credits

Up to 6 semester hours of graduate credit may be considered for transfer to a graduate degree program at UMUC if earned at a regionally accredited institution and if applied to the student's program of study (3 semester hours may be considered for transfer to the MBA program; the Master of Arts in Teaching program does not allow transfer credits). The Graduate School will accept up to 3 graduate transfer credits for the certificate program.

All graduate credits offered for transfer credit must meet the following criteria:

1. The credits must have been earned as graduate credit.
2. The credits must not have been used to meet the requirements for any degree the student previously earned or is expected to earn.
3. The credits must have been awarded within the time limit for the degree or certificate.
4. The student must have earned a grade of "B" or better in the courses considered for transfer. These grades are not included in the calculation of the student's grade-point average.
5. The advisor and the program director must have determined that the transfer courses are relevant to the student's program of study.

6. The credits must have been earned at a regionally accredited institution and be equivalent to graduate-level coursework or recommended for graduate-level credit by ACE.

Graduate students at UMUC must complete a minimum of 12 semester hours at the graduate level, with a minimum GPA of 3.0, and have degree status before transfer credits will be released or posted to their permanent records.

Audit and Pass/Fail

If a student does not want to receive credit, "audit" or "pass/fail" may be selected on the registration form as the grading method. The same fees are charged, but courses that are audited or taken pass/fail do not count toward a degree. All fees and procedures for application and registration apply to students choosing to audit or take courses as pass/fail. Students registering for the management project or executive program courses should leave the "grade option" blank for regular grading; these courses are automatically awarded grades of "S," "I," or "F."

The deadline to change a grading method to audit is 5 weeks after the semester begins; the deadline to change to a pass/fail option is the last day of late registration.

State Residency Status

I. Policy

It is the policy of the Board of Regents of the University System of Maryland (USM) to recognize the categories of in-state and out-of-state students for the purpose of admission, tuition, and charge differentials at those institutions where such differentiation has been established.

A. An in-state student is a student whom the University determines to be a permanent resident of the State of Maryland. For the purposes of this Policy, "permanent resident" is defined as a person who satisfies all of the following conditions and has done so for at least twelve (12) consecutive months immediately prior to and including the last date available to register for

courses in the semester/term for which the person seeks in-state status:

1. Is not residing in the State of Maryland primarily to attend an educational institution; and,

2. Owns and continuously occupies or rents and continuously occupies living quarters in Maryland. There must exist a genuine deed or lease in the individual's name reflecting payments/rents and terms typical of those in the community at the time executed. Persons not having such a lease may submit an affidavit reflecting payments/rents and terms as well as the name and address of the person to whom payments are made which may be considered as meeting this condition. As an alternative to ownership or rental of living quarters in Maryland, a student may share living quarters in Maryland which are owned or rented and occupied by a parent, legal guardian, or spouse; and,

3. Maintains within Maryland substantially all personal property; and,

4. Pays Maryland income tax on all earned taxable income including all taxable income earned outside the State; and,

5. Registers all owned motor vehicles in Maryland in accordance with Maryland law; and,

6. Possesses a valid Maryland driver's license, if licensed, in accordance with Maryland law; and,

7. Is registered in Maryland, if registered to vote; and,

8. Receives no public assistance from a state other than the State of Maryland or from a city, county or municipal agency other than one in Maryland; and,

9. Has a legal ability under Federal and Maryland law to live permanently without interruption in Maryland.

B. In addition, persons with the following status shall be accorded the benefits of in-state status for the period in which they hold such status:

1. A full-time or part-time (at least 50 percent time) regular employee of the University System of Maryland.

2. The spouse or financially dependent child of a full-time or part-time (at least 50 percent time) regular employee of the USM.

3. A full-time active member of the Armed Forces of the United States whose home of residency is Maryland or one who resides or is stationed in Maryland, or the spouse or a financially dependent child of such a person.

4. For UMUC, a full-time active member of the Armed Forces of the United States on active duty, or the spouse of a member of the Armed Forces of the United States on active duty.

5. A graduate assistant appointed through the University System of Maryland for the semester/term of the appointment. Except through prior arrangement, this benefit is available only for enrollment at the institution awarding the assistantship.

C. Students not entitled to in-state status under the preceding paragraphs shall be assigned out-of-state status for admission, tuition, and charge-differential purposes.

D. Assignment of in-state or out-of-state classification will be made by the University upon an assessment of the totality of facts known or presented to it. The person seeking in-state status shall have the burden of proving that he or she satisfies all requirements.

E. The following circumstances raise a presumption that the student is residing in the State of Maryland primarily for the purpose of attending an educational institution:

1. The student was attending high school or residing outside Maryland at the time of application for admission to a USM institution.

2. The student is both (a) not financially independent and (b) is financially dependent upon a person not a resident of Maryland.

The burden shall be on the student to rebut the presumption.

II. Procedures

A. An initial determination of in-state status will be made by the University at the time a student's application for admission is under consideration. The determination made at that time, and any determination made thereafter, shall prevail for each semester/term until the determination is successfully challenged in a timely manner.

B. A change in status must be requested by submitting a USM "Petition for Change in Classification for Admission, Tuition and Charge Differential." A student applying for a change to in-state status must furnish all required documentation with the Petition by the last published date to register for the forthcoming semester/term for which the change in classification is sought.

C. The student shall notify the institution in writing within fifteen (15) days of any change in circumstances which may alter in-state status.

D. In the event incomplete, false, or misleading information is presented, the institution may, at its discretion, revoke in-state status and take disciplinary action provided for by the institution's policy. Such action may include suspension or expulsion. If in-state status is gained due to false or misleading information, the University reserves the right to retroactively assess all out-of-state charges for each semester/term affected.

E. Each institution of the University System of Maryland shall develop and publish additional procedures to implement this policy. Procedures shall provide that on request, the President or designee has the authority to waive any residency criterion set forth in Section I if it is determined that the student is a permanent resident and the application of the criteria creates an unjust result. These procedures shall be filed with the Office of the Chancellor.

A change in residency status must be requested in writing by submitting a Petition for Change in Residency Status. This Petition is is available at the Information Desk, from Graduate Student Affairs staff, or at *www.umuc.edu/studserv/res_change.html*. Students must submit the Petition and supporting documentation (as indicated on the Petition) to the graduate residency evaluator by the last published date to register for courses for the semester or term in which the student is seeking a change in residency status. All questions concerning in-state status should be directed to the office of Graduate Student Affairs at 301-985-7155 or 800-888-UMUC, by sending an e-mail to *gradinfo@umuc.edu*, or by visiting *www.umuc.edu/policy/policy_files/m21020.html*.

International Applicants

To be considered for admission, international students must have:

- Official documents indicating successful completion of the equivalent of a regionally accredited U.S. bachelor's degree. Applicants educated in countries other than the United States must have their official transcripts evaluated by an independent evaluation service. The evaluation company will send a copy of the evaluation both to the applicant and to the Graduate School. Providing the transcript does not ensure admission to the Graduate School. For a transcript evaluation, students should contact directly one of the following independent companies, not affiliated with UMUC:

  1. American Association of Collegiate Registrars and Admissions Officers (AACRAO)
     Office of International Education Services
     One Dupont Circle, N.W., Suite 520
     Washington, D.C. 20036–1135 USA
     Phone: 202-293-9161; Fax: 202-872-8857
     E-mail: *goughd@aacrao.nche.edu* or *oies@aacrao.nche.edu*

  2. International Education Research Foundation (IERF)
     P.O. Box 3665
     Culver City, California 90231-3655 USA
     Phone: 310-258-9451; Fax: 310-342-7086
     E-mail: *info@ierf.org*

  Please consult our Web site for additional information on these evaluation services: *www.umuc.edu/studserv/credeval.html*.

- Proven English language proficiency. Applicants who have not received a bachelor's degree from the United States, the United Kingdom, Australia, New Zealand, Commonwealth Caribbean, or English-speaking Canada must demonstrate English proficiency by submitting a minimum score of 580 on the Test of English as a Foreign Language (TOEFL) and a minimum score of 5 on the Test of Written English (TWE) to be eligible for admission. Applicants must arrange to have official score reports sent directly from the testing agency to the Graduate School. Test scores must be less than two years old.

- A photocopy (front and back) of either a permanent residency card, work authorization card, or the first page and visa page of a valid passport and Form I-94 are required for those international students wishing to study in UMUC programs in the United States.

Note: International students seeking Form I-20 or IAP-66 must be granted admission three months before the semester start date to register for classes. International applicants not seeking Form I-20 or IAP-66 may register for only one course in the decision-pending status while awaiting the official transcript evaluation and official TOEFL and the TWE.

Providing these documents does not ensure admission. An interview may be required. Official transcript evaluation from the aforementioned independent companies must be submitted and evaluated before admission is considered.

Social Security Number

Compliance with the request for the Social Security number is voluntary. UMUC uses this number only as an identifier for records. It will not be disclosed to any third party except on records sent at the student's request and as allowed by the Family Educational Rights and Privacy Act of 1974.

Note: Students who have used the Social Security number in previous contacts with University System of Maryland institutions should continue to do so. Those students who apply for government-controlled financial aid, whose Social Security number is the number that identifies their student records, should also use that number on admission and registration materials for UMUC.

Advising/Study Plans

All students admitted to degree status are assigned an academic advisor. Students are encouraged to contact their academic advisors to prepare study plans before completing 9 semester hours. These study plans are then reviewed by the program advisor.

It is up to the student to seek advising and to keep track of his/her program requirements. Students should retain the catalog that was in effect when they entered their program as it contains all degree requirements for which they will be held accountable.

Whenever possible, students should get advising information in writing. Students who fail to meet all degree requirements will not be cleared for graduation.

Golden ID Program

Students must be Maryland residents, U.S. citizens, or documented permanent residents; 60 years old by the beginning date of the semester for which they are applying; and not employed more than 20 hours per week to qualify for this program (not applicable to executive program or "700-level" courses). To request an application, students should contact Graduate Student Affairs at 301-985-7155. Golden ID students may register during late registration for up to 6 credits per semester on a space-available basis without paying tuition.

Online Programs

Online Degree Programs

The Graduate School offers 17 master's programs with 23 specialty tracks and seven dual graduate programs online asynchronously via WebTycho:

- Master of Arts in Teaching
- Master of Business Administration (32-month online format or combination online and face-to-face format)
- Master of Distance Education
- Master of Education
- Master of International Management
  - — Energy Resources Management and Policy
  - — International Commerce
  - — International Finance
  - — International Marketing
- Master of Science in accounting and financial management
- Master of Science in accounting and information technology
- Master of Science in biotechnology studies
  - — Bioinformatics Practice
- Master of Science in computer systems management
  - — Applied Computer Systems
  - — Database Systems and Security
  - — Information Assurance
  - — Information Resources Management
  - — Software Development Management
- Master of Science in electronic commerce
- Master of Science in environmental management
  - — Energy Resources Management and Policy
- Master of Science in health care administration
- Master of Science in information technology
- Master of Science in management
  - — Accounting
  - — Energy Resources Management and Policy
  - — Financial Management
  - — Health Care Administration
  - — Human Resource Management
  - — Interdisciplinary Studies in Management
  - — Management Information Systems
  - — Marketing
  - — Not-for-Profit Management
  - — Procurement and Contract Management
  - — Public Relations
- Master of Science in technology management
  - — Energy Resources Management and Policy
  - — General Program in Technology Management
  - — Technology Systems Management
- Master of Science in telecommunications management
- Master of Software Engineering
- Dual MBA Degrees
  - — Master of International Management/MBA
  - — Master of Science in electronic commerce/MBA
  - — Master of Science in management/MBA
  - — Master of Science in technology management/MBA
- Dual Accounting Degrees
  - — Master of Science in management with financial management track
  - — Master of Science in management with accounting track
  - — Master of International Management with financial management track

Introduction to Graduate Distance Education

Graduate Programs from the Worldwide Leader in Distance Education

For more than 25 years UMUC has been setting the standard in distance education for working adults worldwide. Because UMUC brings its resources to online students—admission, registration, counseling, financial aid, veterans' benefits, textbook ordering and delivery, and library services—there is no need to go to a campus.

Online students enjoy the unparalleled convenience of commuting to class by modem. They also benefit from classes taught by excellent faculty members whose academic and professional experience enables them to balance business theory with practice.

High-Quality Graduate Programs

UMUC's distance education programs combine theory with practice and emphasize leadership, communication, systems, technology, and a global perspective. As a result of this practical focus, students grow professionally and graduate ready to accept positions of expanded leadership and responsibility.

Distinguished Faculty

Faculty members are selected and retained based on their extensive management and professional experience, teaching ability, and educational achievements.

Convenient for Busy Adults

UMUC offers 17 online master's programs with 23 specialty tracks that permit you to earn your graduate degree from anywhere in the world. Through predominantly asynchronous, computer-mediated conferencing via the World Wide Web, you can earn your degree in only two and a half years—or you can advance at a more leisurely pace if you wish. It's your choice.

Personal Satisfaction and Career Advancement

UMUC's alumni pursue successful careers in many walks of life. In a survey of recent graduates, 96 percent reported they had improved job skills, 87 percent had improved personal recognition, and 97 percent had achieved personal satisfaction with attainment of their UMUC degree. More than 86 percent reported they were able to apply what they had learned to their current positions.

Quality Educational Programs Addressing Real-World Challenges

Since 1978, the Graduate School has provided cutting-edge educational programs that address the challenges managers face in today's globally competitive business environment. The curricula blend theory and practice—helping working adults develop the knowledge and skills needed to address the increasingly complex issues of a constantly changing world, and preparing them for the workplace of the 21st century.

Seventeen Master's Programs and Seven Dual Master's Programs Available Anywhere in the World

InterEd, a research and assessment organization in higher education, reports that UMUC is the largest virtual university in the United States in terms of enrolled students and graduates. UMUC has graduated more than four times as many students as its nearest competitor.

UMUC's decision to develop a virtual university was driven by the needs of part-time, adult students who juggle many responsibilities and require the flexibility and convenience that online education provides. Students can pursue graduate degrees or take individual courses online from the favorite room of their home . . . a hotel room in Singapore . . . or any place they can connect to the Internet.

Online Courses

Demand for online courses is extraordinarily heavy. Students are advised to register early. The schedule of classes is available online at *www.umuc.edu/studserv/isis/schedule/grdistsocmenu.html*. Graduate School tuition and fees are the same for online and on-site courses.

How Does an Online Course Differ from an On-Site Course?

The Graduate School's online courses maintain the same academic standards as on-site courses. Course content, texts, requirements, assignments, and class participation are comparable for online and on-site courses. Students need to adhere to course schedule for assignment deadlines and exam times. Before registering for an online course, students may want to consider the following:

1. Online students need to be prepared to write extensively because nearly all communication is written. Online students need strong English reading and writing skills.

2. Online students need to be competent in the use of computers and commonly-used software programs.

3. Since WebTycho is asynchronous and students are expected to be active participants online, students are encouraged to log in frequently to check what has transpired in their online classroom (in lieu of face-to-face class meetings).

4. Online students need disciplined work habits, effective time management skills, and the ability to work both alone and collaboratively.

Full Services Provided Online

With the help of full electronic services, graduate students may inquire, apply, register, pay tuition, receive grades, update information, and receive academic advising, career services, financial aid, and orientation information online. Graduate students have access to a wide variety of online publications and to more than 95 proprietary databases.

Online Technical Requirements

Minimum technical requirements are subject to change. Current information about technical requirements is available at *tychousa.umuc.edu/help.nsf*. Students are responsible for their own phone line and Internet access costs.

Basic Technical Requirements

- A computer running a Web browser such as Netscape Navigator version 4.7, or higher, or Microsoft Internet Explorer version 5, or higher versions
- Sound-Blaster-compatible sound card with speakers or headphones
- A connection to the Internet
- An e-mail account
- Virus protection software (updated regularly)

Programs with Additional Technical Requirements

Some programs will need the following additional requirements:

- Pentium-based PC (or Mac equivalent) with at least 32 MB of RAM (64 MB is preferred)
- Minimum 100 MB hard drive space (1 GB is preferred)
- 8X CD-ROM (12X CD-ROM is preferred)
- Microphone
- Netscape Navigator 4.7 or higher
- Microsoft Office Suite (including Word, Excel, and PowerPoint)
- Adobe Acrobat Reader
- QuickTime plug-in

WebTycho-Enhanced Sections

All Graduate School on-site sections use WebTycho as an enhancement. WebTycho-enhanced classes provide on-site students with online educational opportunities. Faculty members may elect to use some or all of WebTycho's online features in conjunction with face-to-face classroom activity.

Computer and Internet Access

UMUC is committed to ensuring that students acquire the level of technological fluency needed for active participation in contemporary society and access to up-to-date resources. All UMUC students must be prepared to participate in asynchronous, computer-based class discussions, study groups, online database searches, course evaluations, and other online activities. This policy applies to students in both face-to-face and online classes.

All UMUC students must therefore ensure that they have some type of Internet access. This access may be through use of a UMUC computer lab, university or public library, or other readily available source if the student does not have their own home access. However, it should be regularly available and the student should have a current e-mail address.

Policy on Connectivity and Computer Literacy

To take full advantage of the Graduate School's educational offerings, students must own or have access to a personal computer and have access to the Internet.

All graduate students must be able to reach their fellow students, faculty, and the university via e-mail. It is imperative that students notify Graduate Student Affairs of updated e-mail addresses by sending an e-mail to *gradinfo@umuc.edu*. Students who do not have a personal e-mail account may create one by using the directions in the current *Graduate Schedule of Classes* or on the Web at *www.umuc.edu/grad/compute.html#accounts*. In some classes, students may be required to participate in asynchronous, computer-based class discussions and study group activities.

All graduate students are expected to have a working knowledge of, and access to, a basic word processing program such as WordPerfect or Microsoft Word; a spreadsheet program such as Lotus, QuattroPro, or Microsoft Excel; and Internet electronic mail services. Knowledge of Microsoft Windows and Internet information services such as the World Wide Web is also highly recommended. Internet information services may be necessary to conduct appropriate research for some courses. The Library Skills for the Information Age course (UCSP 610) is required for all new students, all students who reapply for admission and who have completed 6 semester hours or less, and for students who have graduated and want to pursue the dual degree who have not yet taken the course.

Applicants and students who require further training in the use of Internet services and basic software packages may wish to consult the UMUC *Undergraduate Schedule of Classes* or speak to an undergraduate counselor. The schedule may be obtained by calling 800-888-UMUC, and counselors may also be reached at 800-888-UMUC.

Graduate School Programs

Doctor of Management

The Doctor of Management (DM) degree program was developed in recognition of the critical importance of an interdisciplinary and global perspective for leaders and managers. This program prepares individuals to assume leadership of projects, programs, teams, or organizations across sectors, fields, and national boundaries. The program readies graduates to contribute to such critical activities as organizational productivity and performance assessment; strategy formulation; operational planning; technology acquisition, planning, and integration; and human performance assessment and development. Committed to building knowledge across functional areas and contributing disciplines, the program allows for increased specialization in one of three areas: organizational processes, international operations, or technology and information systems. Finally, the program is dedicated to helping those individuals who want to continue learning and expand their knowledge, skills, and abilities beyond the master's degree level.

A Doctor of Management degree candidate must complete between 48 and 60 semester hours of coursework (depending upon his or her prior field of study) beyond the master's degree. Six to 18 semester hours are set aside for coursework devoted to developing breadth of knowledge in such areas as international management, technology and information systems, marketing, finance and economics, project management, and the behavioral sciences. Twenty-one semester hours, including 12 for the completion and defense of the dissertation, are dedicated to developing depth of knowledge in the chosen area of specialization. Eighteen semester hours are devoted to doctoral core seminars covering epistemology and critical thinking, systems and environment, doctoral research methods, technology and social systems design, leadership in the 21st century, and innovation and strategy for global competition. Three semester hours are devoted to a research methods course. Prior to carrying out and defending the dissertation, candidates must successfully complete a comprehensive examination. All degree requirements must be completed within seven years of the start of the first seminar; all coursework and the comprehensive exams must be completed within four years.

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Admission Requirements

In order to be eligible to apply to the DM degree program, an applicant must have a master's degree from a regionally accredited college or university with an overall GPA of 3.20 or better on a 4.00 scale. If the GPA in the master's degree is below 3.50, the applicant must also submit scores for the GRE general test or the GMAT. The UMUC Graduate School reserves the right to request additional transcripts.

Admission to the DM degree program is competitive. Therefore, meeting the above eligibility requirements does NOT guarantee admission.

For a complete list of the documents required to complete an application, please refer to the DM application form and "Instructions to the Applicant" in the DM application package.

Locations

Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations.

Curriculum

The DM study program is individually designed for every student. The requirements for successfully completing the degree are divided into two complementary parts.

The first part is made up of coursework components that support the general area of students' research concentration. This part is structured to include a specialization area and an interdisciplinary area of breadth courses. The coursework culminates with the completion of a comprehensive examination. The objective of this pre-dissertation stage is to provide students with the theoretical foundations and practices of the specialization and breadth fields of study and with a command of the relevant quantitative and/or qualitative methods of research and analysis. However, from the beginning of the study program, the student is encouraged to start planning the dissertation proposal in terms of a specific topic of interest, reviewing the literature, and thinking about appropriate research methodologies.

The second part of the study program is composed of original research and the presentation of research findings in a written dissertation of applied form. This part culminates in a dissertation defense. The objective of the dissertation stage is to have the student apply theoretical and practical knowledge and analytical methods to the resolution of a practical research problem. The research work should be original and contribute to the existing body of knowledge.

Coursework Requirements

A DM degree candidate must complete between 48 and 60 semester hours of coursework (depending upon the prior field of study) beyond the master's degree.

Doctoral Core Seminars — 18 credits

Covering epistemology and critical thinking, research methods, technology and social systems design, leadership in the twenty-first century, innovation and strategy for global competition, and sustainable development. There are two 9-hour seminars: DMGT 701 is taken at the beginning of program coursework and DMGT 702 is taken after other coursework is completed.

DMGT 701 — 9 credits

The Philosophy and Methods of Scholarly Inquiry. This seminar has three integrated modules:

- Systems thinking and organizational management
- Epistemology and research methods
- Critical thinking and organization theory

DMGT 702 — 9 credits

Technological Innovation for Global Leadership. There are three integrated modules in this seminar:

- Technology and social systems
- Leadership in the information age
- Innovation strategy for international competitiveness.

Breadth Courses — 6–18 credits

These courses are in a number of areas that help to bring in the interdisciplinary perspective to complement the specialization area. They are selected to suit the background and study plan of each student from courses offered by participating departments of the Graduate School. A student must satisfy a breadth requirement in each of the following six areas. The choice of breadth course is worked out with a faculty advisor and should be taken only after admission to the program. The examples provided are merely illustrative.

- International Management (example: IMAN 625)
- Behavioral Sciences (examples: ADMN 625/635)

- Technology/Information Management (examples: TMAN 611; CSMN 601)
- Economics/Finance (example: ADMN 631)
- Marketing (examples: IMAN 640; ADMN 685; ECOM 620)
- Project Management/Assessment (examples: TMAN 632/640)

Depending on the prior graduate educational background of the student, the total number of credit requirements of the "breadth courses" may vary between 6 and 18 credits.

Specialization Courses — 9 credits

In any of the three areas of concentration:

- International Operations
- Organizational Processes
- Technology and Information Systems

Participating departments offer special doctorate-level courses. Generally, the courses are on the cutting edge of the academic endeavor. A maximum of 6 credits may be taken from doctoral-level courses offered by other regionally accredited universities (with departmental approval).

Research Methods Course — 3 credits

A student must complete one of the doctoral level research methods courses offered.

Comprehensive Examinations

Upon successful completion of all coursework, a student must demonstrate mastery of all the subjects covered by passing comprehensive examinations before advancing to the doctoral dissertation.

Dissertation Requirements — 12 credits

A dissertation is required of each doctoral student as evidence of ability to perform scholarly research and to interpret and present research results. The candidate must demonstrate a mastery of the special field of study and of the materials and techniques used in his/her research. As a unique feature of the Doctor of Management degree program, students are advised to make their dissertation research as applied and interdisciplinary as possible. At all stages of the dissertation research process, the student is encouraged to expand the boundaries of traditional thinking and scholarship, both in methodology and content. Therefore, specific dissertation approaches and formats for a doctoral student are not limited to the model presented below. The general model, though, consists of the following:

- Concept Paper for Relevant Audience—presenting a conceptual paper to top management of an organization or a special interest stakeholder's group. The paper should include a synthesis of problem recognition, knowledge assessment, and a framework for research study presented in "lay person's" terms.
- Conference Paper for Professional Association—explaining the significance of the specific research question and knowledge assessment to a professional association or group of people who are interested in such a knowledge assessment. This would typically be a complete paper (commonly referred to as a "review paper") to a gathering of more than 100 professionals, where papers are selected through a professional evaluation.
- Publishable Paper for Relevant Journal—demonstrating the ability to capture and share new knowledge by preparing a publishable journal article or a publishable project report. This is the final paper that demonstrates the candidate's contribution to the chosen knowledge area. The Dissertation Research Committee will use a well-publicized standard for determining the acceptability of the paper.

A complete dissertation will be the basis for the student's final defense to be conducted by his/her Doctoral Research Committee. The final defense will consist of a public, oral presentation and defense of the dissertation.

Master of Arts in Teaching

The Master of Arts in Secondary Teaching (MAT) is a 36-credit degree program designed to provide those who are not teachers, but who hold a bachelor's degree in Math, Science, or Computer Science, with a solid theoretical framework in pedagogy as well as academic breadth and depth in their subject area. The MAT curriculum centers around teacher candidates' knowledge of their subject area, their ability to engage students in learning through a variety of instructional methods, and the integration of the theory and practice of teaching through intensive field experiences. Teaching certification areas include: biology, chemistry, computer science, earth/space science, mathematics, physical science, and physics.

The Resident Teacher Certification (RTC) program is also available through the MAT program. This 135-hour accelerated program allows those persons who already have a bachelor's degree in a nonteaching field to become certified to teach in the state of Maryland. It is an excellent way for those who already have a career to transition into the teaching field.

Degree Program

This 36-credit degree program is available for part-time and full-time students receiving permission. Completion of this program results in a Master of Arts in Teaching (MAT). This program prepares students for the PRAXIS II exam. On passing PRAXIS I (pre-professional exam) and II (content and pedagogy exam), students will be eligible to apply for the Maryland Standard Professional Certificate I. The Standard Professional Certificate I is valid for 3 years and issued when a student has met all certification requirements and is employed by a Maryland local school system (or an accredited nonpublic school).

Information on the PRAXIS I is available at *www.msde.state.md.us/certification/testinfo.html*. An explanation of the PRAXIS exam can be found at *www.msde.state.md.us/Fact%20Sheets/fact44.html*. PRAXIS registration information can be found at *www.teachingandlearning.org*.

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Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

The Graduate School does not require the Graduate Record Examination (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program. However, the PRAXIS I is required.

A student may be admitted in one of two classifications: degree-seeking and provisional. The admission requirements for each classification are explained below.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited university or college; an overall undergraduate GPA of at least 3.0 on a 4.0 scale, submission of the official

transcript from the bachelor's-degree-granting institution, submission of successful Praxis 1 scores (see below), and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

In order to be admitted to the MAT program, all students are required to have a transcript review to determine if they have the necessary coursework needed for their content area. Students must also pass the state of Maryland's requirements on the Praxis I exam with scores on the paper form of the test with: Reading = 177, Writing = 173, Mathematics = 177, or Composite Score = 527; and scores on the computer version of the test with: Reading = 319, Writing = 319, Mathematics = 322, or Composite Score = 966.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 33) for information about the TOEFL and TWE examinations and evaluation of international education.

Provisional Status

Provisional status for the MAT may be granted to students who fall slightly below the minimum grade-point requirement for degree status, have not reported passing the PRAXIS I exam, or need to complete a limited amount of additional coursework in the specified area of certification. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Those who achieve a 3.0 GPA during completion of nine MAT credits may be moved (provided they meet all other admission requirements) to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Locations

Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations.

Resident Teacher Certification Program

UMUC now offers an accelerated alternative route to teacher certification in Maryland for career changers with bachelor's degrees who would like to teach in a Maryland public school. The program includes six modules completed during a 14-week semester through online study and a two-week summer residential experience in a local school system. Successful candidates are eligible for immediate hire. While participants complete their first year of teaching, they must also complete the state required reading courses. All candidates are assigned a mentor and also receive extensive support through membership in an electronic learning community. At the end of the first year, teachers who receive satisfactory evaluations may be eligible for the Maryland Standard Professional Certificate I. Admission to the program requires at least a 3.0 GPA for the bachelor's degree, passing scores on PRAXIS I and PRAXIS II examinations, an interview, and a commitment to teach in the Maryland public schools. Certification is available in English, mathematics, science, social studies, computer science, foreign language, and elementary education. Application for this program may be done by completing the application form included in this publication, or online.

Core Courses

OMAT 601 3 credits

The Contemporary School

Issues and ideas related to contemporary secondary schools and today's adolescents are explored. Administration, structural factors, composition of the student body, methods of instruction, curriculum, security, legal factors, and issues related to physical plant are discussed. Other topics addressed include diversity, special education, quality pressures and initiatives, school violence, substance abuse, poverty, racism, the digital divide and technology fluency, and literacy and language issues. Teacher candidates are challenged to think critically about their role in the classroom and experiences with students.

Note: OMAT 601 is strongly recommended as the first course.

OMAT 602 3 credits

Adolescent Growth and Development

Key concepts and theories related to human growth and development are examined. Particular emphasis is placed on adolescent development, including unique situations and challenges facing students and teachers in modern society. Legal, moral, and ethical issues and concerns related to teacher-student and peer interactions are explored. Characteristics that influence development and learning are analyzed through an ecological perspective. Various approaches, tools, and techniques are examined for their usefulness and value in helping to reach and engage adolescent learners.

OMAT 603 6 credits

Curriculum, Instruction, and Assessment

Theory and practice in curriculum design, instructional methods, and assessment for secondary education are examined. Classical and contemporary teaching theories are explored in depth for their applicability in the modern secondary classroom. Emphasis is placed on a broad spectrum of teaching techniques, development of reflective teaching practices, adaptation of learning activities to meet special needs, principles of effective classroom management, and modeling behavior. Teacher candidates are required to complete 25 field experience hours at designated school sites. Several options are available for the completion of this requirement.

OMAT 604 3 credits

Subject Area Methods

A variety of teaching methods such as cooperative learning, reflective teaching, inductive reasoning, and active learning are examined. Discipline-specific methods for teaching and learning are evaluated for their effectiveness. Best practices and innovative techniques in individual subject areas are emphasized. Teachers access and evaluate a wide range of curricular resources critical to their disciplines. Course projects are structured for practical application in the internship experience.

Prerequisite: Successful completion of OMAT 603.

OMAT 605 3 credits

The Diverse Learner

The concept of the “diverse learner” is defined and various groups that are encompassed by this term are explored. Unique characteristics, educational support, and learning accommodations associated with diverse student needs are examined. Related demographic, social, and economic trends are woven throughout the course. Teachers develop and utilize strategies to integrate special needs students both academically and socially. A working understanding of the role and impact of special education legislation, including IDEA 97 and Section 504, is developed.

Prerequisite: Successful completion of OMAT 604.

OMAT 606 9 credits

Internship with Seminar

Teachers apply concepts, techniques, methods, and theories learned in prior courses and field experiences. The teacher candidate spends a full semester in a professional develop-

ment school working with a school-based teacher mentor and university mentor. This internship is a continuation of the initial field experience in OMAT 603. The online seminar is conducted throughout the internship semester and addresses topics important to new teachers such as the establishment of credibility in the classroom, parental involvement, support and referral services for students, instructional planning, and workload management. A teaching portfolio is developed for final review. Teachers must be available Monday through Friday during regular school hours and able to participate in additional school-based activities.

OMAT 607 3 credits

Secondary Reading I

Essential dimensions of secondary reading instruction are explored, including motivation for reading, cognitive strategies, and remediation. Other topics include appropriate reading materials, technology for reading instruction, assessment of content literacy, and relationships between vocabulary and concept development.

OMAT 608 3 credits

Secondary Reading II

A coherent literacy program that supports reading and writing across subject areas is developed. Methods and strategies for evaluating and adapting reading curricula for varying student needs are addressed. Teachers develop lesson plans that integrate appropriate reading materials to achieve specific subject-matter goals.

Prerequisite: Successful completion of OMAT 607.

OMAT 609 (OMED 600) 3 credits

Technology in Teaching and Learning

This course builds on traditional concepts in foundations of education courses, but incorporates how technology impacts and advances learning. Issues involving the history and evolution of technological innovations in education, ethics, and the use of technology for testing and assessment are addressed. Detailed topic explorations include collaborative, object-based, and museum learning principles; the integration of technology in the assessment of learning styles; and performance-based and standards-based curricula. Strategies for using technologies with special needs populations are also examined.

Master of Business Administration

This program is designed in both an online and combination online and face-to-face format for working professionals from a wide range of academic and organizational backgrounds. The program can be completed in 32 months without interrupting the student's career. The objectives of the program are to explore the evolving nature of corporations, blend leadership with change management, better measure an organization's intellectual assets, merge product development with entrepreneurship, and foster new approaches to measuring the economic performance of organizations. Organizational and management processes are discussed in the context of the global business environment. The MBA program combines current management theory and relevant research with the real-world experiences of students and faculty to address the major competitive challenges of the 21st century.

Students interested in an accelerated executive MBA format should refer to page 164. Classes for this program are held on Saturdays in a face-to-face format and the coursework is enhanced via the Internet. The entire Executive MBA program can be completed in 21 months.

Students who first complete the entire cohort MBA degree program (43 credits) and meet all requirements for graduation will be eligible to earn a dual degree by completing extra semester hours in one of the following programs: Master of International Management, Master of Science in electronic commerce, Master of Science in management, or Master of Science in technology management. These degree programs are offered either online or in a combination of online and traditional face-to-face format. Please refer to pages 149–163 for more information.

Degree Program

The 43-credit MBA program consists of seven 6-credit courses, each of which is 14 weeks long with 3 weeks off between courses. Each student is assigned to a cohort of approximately 30 students that continue together through completion of their MBA program. Upon acceptance to the MBA program, students register for a required 14-week MBA Fundamentals course (AMBA 600) which is worth one credit.

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Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610E Library Skills for the Information Age during AMBA 600.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

A student may be admitted in one of two classifications: degree-seeking and provisional. The admission requirements for each classification are explained below.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited university or college; an overall undergraduate GPA of at least 3.0 on a 4.0 scale, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 33) for information about the TOEFL and TWE examinations and evaluation of international education.

Provisional Status

Provisional status for the MBA may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Those who achieve a 3.0 GPA during completion of seven MBA credits are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor-degree granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Locations

Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations.

Core Courses

AMBA 600 — 1 credit

MBA Fundamentals

This 14-week course is designed to provide students with management fundamentals and an opportunity to improve their proficiency in the Web-based technologies used throughout the MBA program. The objective of this course is to prepare people with diverse academic and business backgrounds to work and learn effectively in an online environment. There are assignments in statistics, financial accounting, and the Theory of Constraints. Students also prepare a PowerPoint presentation and write a research paper. By the end of the course, students should have a good understanding of both the academic requirements and the technical skills necessary to succeed in the MBA program.

AMBA 601 — 6 credits

The Role of Managers and Organizations in Society

This course introduces participants to the concepts and theories that are the essential building blocks of management thinking. These key themes are incorporated throughout the MBA program and will be further developed in subsequent courses. They are sequenced so that they build upon each other during the program.

The core themes are:

- The manager as a leader
- The manager as a systems thinker
- The manager as a critical thinker
- Ethics and social responsibility
- The organization as a global enterprise
- Evolving business models

AMBA 602 6 credits

The Dynamics of Individuals and Groups at Work

This course is designed to offer learning opportunities wherein students can evaluate the interplay of the nature, meaning and value of work with individual, group, organizational and societal outcomes. It explores strategies and methods for aligning individual interests and organizational needs to reach organizational goals. Through readings, case analyses, exercises, presentations and discussions, students analyze the philosophical, legal, psychological, and structural decisions that managers and leaders must make in managing the dynamic human element at work. The course includes interpersonal skill development, with an emphasis on effective communication processes, to assist students in increasing their competence in successfully working with people.

AMBA 603 6 credits

The Marketing of New Ideas

As a managerial process, marketing is the way in which an organization determines its best opportunities in the marketplace. The managerial philosophy of marketing puts central emphasis on the customer. Accelerated technological change and globalization exert increased pressure on organizations to develop and transform their products, services, and marketing programs. Stable product design and long production runs are no longer the norm. This course approaches the process of new product development and strategic marketing from the perspective of understanding customers and cultivating and nurturing customer relationships through the effective flow of knowledge resources within, and external to, the organization, with an emphasis on the importance of market research, customer relationship management, and data mining. This course addresses the increasing importance of electronic commerce as a distribution and promotional channel for business and explores emerging New economy marketing applications and the effectiveness of various e-commerce strategies. Finally, the course addresses issues of ethics and social responsibility in marketing management. Topic areas include:

- Strategic marketing management
- Entrepreneurship and Intrapreneurship
- Knowledge management
- Product development and innovation
- Electronic commerce

AMBA 604 6 credits

Technology and Operations Management

This course explores the latest information technologies that enable an organization to operate around the world and around the clock. To maintain an organization's competitiveness, managers need the tools—such as statistical process control, decision trees, forecasting techniques, expert systems, and organizational benchmarking—to quickly and effectively acquire and analyze information. This involves taking advantage of changes in technology, monitoring customer and competitor behavior, and analyzing their own organization's processes. Because shortened product life cycles make managing new projects a critical task, effective project management concludes the course. Topic areas include:

- Information systems
- Quality control
- Forecasting
- Operations management
- Project management

AMBA 605 6 credits

The Economics of Management Decisions

The economic environment of an organization defines the threats to its survival and the opportunities for its future success. This course applies the concept of economic decision making to a wide range of management issues. The global economy is continually undergoing changes. Of special significance is the evolution of financial markets in response to rapidly expanding worldwide investment opportunities. This course provides a framework for discussion and insight into these issues. Important valuation themes include the valuation of intellectual property and the valuation of businesses as a whole for the purpose of merger

or acquisition. Increasingly, managers are restructuring financial information as well as supplementing it with nonfinancial information to better analyze the economic performance of their organizations. Several important techniques of performance evaluation are discussed—economic value added (EVA™), the Balanced Scorecard, and throughput accounting. Cost management remains an essential topic within every organization and provides the framework to study activity-based costing. However, too much attention to cost often overlooks the key objective of every organization: to increase the value it provides to the customer. Therefore, an organization's performance is also analyzed from the perspective of the theory of constraints. The course is divided into four modules:

- Financial statement analysis
- Valuation
- Performance measurement
- Cost management

AMBA 606 6 credits

Organizations and the External Environment

This course focuses on the various types of business organizations and the public regulatory environments that shape organizational decisions. Emphasis is placed on the framework of relevant laws, regulatory structures, and public policies at local, state, national, and international levels that define the inner workings of business activities. The impact of law, regulation, and technology on corporate decision making are key focus points in this course. Systems thinking, critical thinking, ethics and social responsibility, the impact of technology on management, the future of organizations, and global challenges are linked with the course's critical features. Increased student knowledge of and comfort with the nature of external business environments is a course goal. Topic areas include:

- Business and antitrust law
- Regulatory environments
- International trade
- Macroeconomic policy
- Technology standards

AMBA 607A 3 credits

Strategic Management

Strategy is concerned with value creation and involves defining the scope of a firm's business operations, its corporate strategy, and determining how it will compete in its selected business(es); its business strategy. This course addresses the challenges of formulating and implementing strategy in both single-business and multi-business firms, from the perspectives of their top-level decision makers. It focuses on the overall firm, integrates concepts from functional areas of management, and explores the problem of the firm's strategic direction with respect to its external

AMBA 607 is comprised of two, 3-credit courses taken consecutively by students: AMBA 607A and AMBA 607B. All MBA students must take AMBA 607A. Students with approved transfer credits and students pursuing a dual degree program may choose not to take AMBA 607B. Those with approved transfer credits may simply substitute those credits for AMBA 607B.

competitive environment and internal resources and capabilities.

- Different perspectives on strategy
- Analytical models and frameworks in strategy formulation
- Building and sustaining competitive advantage
- Growth and international strategies
- Strategy implementation
- Corporate governance
- Strategy in the New Economy

AMBA 607B 3 credits

Elective Project

Under the supervision of a faculty member, students design and complete a research project on a topic of their choice in this course. A key requirement is that the project must deal with a substantive management issue related to a real or proposed organization. Students can work on the project alone or in a team. Here are some examples of topics students could select for their projects:

- Develop a business plan for their employer (or for their own venture).
- Carry out industry and competitor analysis for an organization.
- Design an organization's business- or corporate-level strategy, for example, competitive strategy, growth strategy, internationalization strategy, e-business strategy, and so forth.
- Study the competitive advantages of a specific region, state, or country.
- Design and complete an organizational assessment with change strategy as appropriate.
- Undertake a benchmarking study for an organization.
- Design a balanced scorecard for an organization.

Master of Distance Education

The Master of Distance Education (MDE) is designed for individuals who are capable of managing the distance education enterprise within educational, business, government, and nonprofit organizations. In a rapidly expanding field, the graduates of the MDE program will be able to engage in the planning, budgeting, development, delivery, and support of distance education and distance training programs. The MDE program is designed in an online format for working adults who want to complete their degree without interrupting their careers. Students who successfully complete the master's degree will be able to understand and critique the broader policy and social issues that arise from using distance education and technology-based learning; plan and manage distance education and training courses, programs, departments, and organizations; design, develop, and deliver high-quality distance education and training in ways that reflect a variety of different approaches to teaching and learning; select and use technologies on the basis of their differing educational and operational characteristics; evaluate and conduct research on distance education professionals around the world; cost and budget distance education development and delivery systems; and understand, from a learner's perspective, what it means to engage in distance and technology-mediated learning.

This program is offered in partnership with Carl von Ossietzky University of Oldenburg, Germany, a leading German institution with extensive experience in distance education. Oldenburg is contributing a certificate and several courses to the program, all of which earn full credit in the Master's program. This helps to ensure that the program has the broad global perspective so critical for distance educators in today's world.

Degree Program

In each segment of the degree program, theory and concepts are presented so the student may develop and evaluate management skills. In each course, faculty members combine theoretical concepts with the practical application of usable skills. This 36-credit degree program consists of seven (3-credit) core courses; four (3-credit) elective courses; and one (3-credit) final required project course.

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Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Technical Requirements

Because of the nature of this degree, certain technical requirements are needed. Refer to page 37 for those requirements.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

A student may be admitted in one of three classifications: degree-seeking, provisional, or decision-pending. The decision-pending classification is temporary while students await final approval of admission. The admission requirements for each classification are explained in the following sections.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally

accredited university or college, an overall undergraduate GPA of at least 3.0 on a 4.0 scale; submission of the official transcript from the bachelor's-degree-granting institution; and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 33) for information about the TOEFL and TWE examinations and evaluation of international education.

Provisional Status

Provisional status may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Classification

The decision-pending classification is short term and is meant for students who have not completed the admission process previously described. Students may enroll in the following graduate course before UMUC has received the official transcript from the bachelor's-degree-granting institution: OMDE 601. Students must receive an admission decision before subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

Locations

Classes in the Master of Distance Education program are currently offered entirely online.

Certificate Programs

The online certificate programs are designed to provide education and training professionals with a core set of knowledge and skills to help them manage the distance education enterprise. Certificates are the ideal credential for individuals who do not wish a full master's degree or for those who already have one or more advanced degrees and wish to add to their credentials in the distance education field. All the courses in each certificate program earn full graduate credit that can be applied toward the master's degree in Distance Education. See page 179 for certificate information.

Core Courses

OMDE 601 — 3 credits

Foundations of Distance Education

The goals of the course are to provide the student with a foundation of knowledge, skills and attitudes that are required by a competent practitioner of distance education. Students explore the critical concepts and issues identified in the distance education literature and critically examine the history and theories of the field. The course has been developed by Ulrich Bernath (Germany) and Eugene Rubin (USA) in collaboration with Börje Holmberg (Sweden) and Otto Peters (Germany).

OMDE 602 — 3 credits

Distance Education Systems

Distance education functions within the organizational structure of educational institutions, businesses, nonprofit organizations, and government will be examined. Students analyze operational, logistic, and regulatory systems within distance education and training organizations. A range of theories pertaining to systems in general, systems in education, systems needs in distance education, and systems approaches to organizational development are introduced.

OMDE 603 3 credits

Technology in Distance Education

This course explores the role of technology in the design, development, and delivery of distance education. Students critically examine the relationship between technology and the goals of the educational/training organization. Various uses of technology are explored in the areas of course development, asynchronous and synchronous distance course delivery, and management/administration. The relationship of information technology and distance education is explored, and special emphasis is placed on computer-based technologies.

OMDE 604 3 credits

The Management of Distance Education 2: Leadership in Distance Education

This course introduces the student to the organization, management, and administration of distance education systems. Specific issues include roles (both traditional and unique), leadership, human resource management, employee relations, the role of information technology, student support services, faculty/staff development, interinstitutional collaboration, funding, delivery systems, and policy. Both the education and business environments are explored in this course, and students gain understanding and skills that allow them to function effectively in either type of organization.

OMDE 606 3 credits

The Management of Distance Education 1: Cost Analysis

The course places the economics of distance education in the larger context of economics of education. A variety of methodological approaches (including cost/benefit and cost/effectiveness analysis) are applied to the distance education context. A variety of costing techniques and economic models are explored and applied to different institutional forms and levels of distance education. The module has been developed by Thomas Hülsmann (Germany).

OMDE 607 3 credits

Instructional Design and Course Development in Distance Education

This course examines the process of instructional design and development in a distance education and training context. Students critically evaluate the relationship between instructional design and technology. Various models of instructional and course development are considered (for example, large versus small scale course development, centralized versus decentralized course development, individual faculty/author versus team course development). Students apply the instructional development process by developing a small instructional unit. Special emphasis is given to Web-based instructional design and delivery.

OMDE 608 3 credits

Student Support in Distance Education and Training

Students are introduced to a variety of tutoring and student support systems, and explore various issues and critical concepts. Theories and frameworks related to tutoring and student support systems for different contexts are explored. Students learn and use a systems approach to problem solving to evaluate existing tutoring and student support systems. Functions such as recruitment, registration, tutoring, advising, counseling, study center models, planning and management, and access to library and information systems are explored. Students examine various systems of hiring, training, supervising, evaluating, and remunerating faculty, tutors, and student support personnel. Issues such as the use of local, regional, and central offices and study centers are discussed. The module has been developed by Jane Brindley (Canada) and Alan Tait (UK).

Elective Courses

OMDE 611 3 credits

Distance Education Library Services

This course will provide an overview of the design and delivery of library services to distance education students. The course reviews the types of distance technologies used and how the library can be integrated into the delivery of courses in a variety of formats. In addition, this course covers methods for developing and evaluating library instructional materials, primarily in Web-based formats, to teach distance education students library research skills. The course has been developed by Ilene Frank, University of South Florida, Tampa Campus Library.

OMDE 613 3 credits

K–12 Distance Education

Distance education (DE) within the K–12 environment is a somewhat unique and special application of distance education. Students work in a different environment and under different constraints than higher education students and business employees, yet the principles and techniques are the same. This course explores a variety of topics including models of K–12 distance education, DE resources for the K–12 environment, distance course development for the K–12 environment; virtual high schools; examination of a variety of local, state and national implementations of K–12 distance education; teacher training in distance education, and so forth.

OMDE 614 3 credits

Intellectual Property and Copyright

This course will provide an overview of intellectual property issues, with an emphasis on the United States Copyright Law and the application of federal copyright principles to the distance education environment. The advent of the Internet along with the introduction of new technologies present new challenges to a system intended to balance the rights of both creators and users of copyrighted works. Although the law, not unlike the technology, will continue to develop in this area, this course will provide educators with a general framework for addressing difficult issues such as ownership of electronic course materials and use of copyrighted works at a distance. There will also be discussion of current events and the implications of the Digital Millennium Copyright Act.

OMDE 620 3 credits

Training and Learning in Multimedia

Students think critically about the use of digital media in a variety of educational settings and identify properties, strengths and weaknesses of multimedia in different learning contexts. The course introduces the students to basic psychological processes of perception, understanding, and learning. Multimedia and instructional design for online learning systems, such as Web-based training, are a special focus of the course. Hands-on experiences with several multimedia and online learning and information systems are provided. Additional topics covered include groupware and collaborative learning technologies, intelligent systems, instructional simulations, and virtual reality systems. The module has been developed by Joachim Hasebrook (Germany).

OMDE 621 3 credits

Training at a Distance

This course examines the role of distance training in business, nonprofit, and government organizations. Students explore a wide variety of issues, problems and solutions in, the areas of: Web-based training, the economics of distance training, distance technology in the business organization, synchronous versus asynchronous interactive tools, collaborative and problem-solving tools, authoring tools, insourcing versus outsourcing, and the role of multimedia in distance training. Specific emphasis is given to the concept of the corporate virtual university and its design and operation.

OMDE 622 3 credits

The Business of Distance Education

Distance education/training is emerging within a highly competitive environment. Not only does the manager need to know about cost effectiveness issues, but also is often responsible for such issues as marketing (local, national, and increasingly worldwide), insourcing versus outsourcing, balancing the strong entrepreneurial focus of distance education within more traditional service-based organizations, and whether the distance education unit should be integrated or self-supporting. The course includes emphasis on the development of business and marketing plans and the use of common business analysis tools. In addition, students explore the rapidly expanding role of private and publicly traded education companies that are marketing new distance education products and services to the consumer market.

OMDE 623 3 credits

Web-Based Learning and Teaching and the Virtual University

The virtual university is a new concept that has recently evolved as a result of the emergence of the World Wide Web as a means of delivering higher education. This course covers the brief history, definitions, and implementations of the concept of the virtual university in higher education, government, and business. The rapidly evolving literature of Web-based learning is explored, with special emphasis placed on Web-based pedagogy and course design. In addition, the impact of Web-based technologies is discussed. The student begins developing Web-based learning environments and uses Web-based communication tools.

OMDE 625 3 credits

National and International Policies for Distance Education in Developing Countries

This course is an exercise of stock taking. It will examine the purposes for which distance education has been used and the audiences reached. It will analyze the roles played by international agencies including bilateral and multilateral funding agencies, the UN family, regional bodies, and the specialist agencies will be discussed. The goal of the course is

to develop and use typologies in order to examine the advantages and disadvantages of a range of organizational models for distance education at various educational levels, relating to audience, educational purpose, and choice of technologies.

OMDE 626 3 credits

Technologies for Distance Education in Developing Countries

This course is explorative in character. It examines the range of educational technologies that assist institutions in reaching various off-campus audiences (from print, through broadcasting to satellite links and computer-based systems). The course will examine the use of computers in school for information science and computer studies; application to the general curriculum; access to Internet; and school linking. It will give an assessment of current and planned ventures including emerging rich-country policies and institutions, the changing role of the private sector, the role of conventional universities in relation to e-learning and the new international players (for example, African Virtual University).

OMDE 631 3 credits

Advanced Technology in Distance Education I: Synchronous Learning Systems

This is an advanced course that builds upon OMDE 603 Technology in Distance Education. The course focuses specifically on synchronous (real time) technologies such as satellite broadcasting, cable channels (CATV), telephony, wireless technology (WAP), and Web-based technology, such as push, poll, compression, and streaming . Also, students will be introduced to synchronous tools such as MOO's, MUD's, ICQ, text and audio chat, 2D-3D, application sharing and white board. Students critically examine instructional–led learning environments–audio and video systems such as: interactive TV, site-based videoconference, and desktop videoconference. Some technical details regarding standards-based technologies, telecommunications technologies, and computer technologies are examined so that students will be able to effectively manage the implementation of these tools.

OMDE 632 3 credits

Advanced Technology in Distance Education II: Asynchronous Learning Systems

This is an advanced course that builds upon OMDE 603 Technology in Distance Education. The course focuses specifically on asynchronous (nonreal time) technologies such as computer-mediated communication (computer conferencing), e-mail, listserv's, archived streaming audio and video, and so forth. Some technical details are covered relating to telecommunications technologies, video technologies, and computer technologies to ensure that the students can effectively manage the technical implementation of these tools.

OMDE 690 3 credits

Distance Education Portfolio and Project

This required capstone course covers two significant tasks for students:

- Create a personal distance education portfolio which will serve as an ongoing professional resource, as well as a useful job search tool.
- Develop and document a case study/project for an organization in the area of distance education and training. The purpose of this is to provide the student with an opportunity to display and practice a variety of skills and knowledge in the area of distance education and training.

Prerequisite: Completion of 30 semester hours.

Master of Education

The Master of Education (MEd) with a specialization in Instructional Technology is designed for K–12 teachers and technology educators who want to incorporate technology into their course curricula, to develop content expertise in the area of K–12 instructional technology, to gain a broad understanding of technology and its application in the contemporary school, and to lead change efforts at the classroom or school levels.

There are three program goals associated with the degree: instructional, technological, and leadership and management. Instructional Application: Teachers understand the use of technology and its impact on curriculum and instruction in the classroom. Teachers gain exposure to the wide range of curriculum resources available to them through the Internet, software applications, and other forms of multimedia. They also learn to evaluate different teaching methods using technology, to determine their appropriateness for use with diverse student populations, and to assess their impact on student learning. Technological Application: Teachers are exposed to a wide array of instructional technologies such as the Internet, synchronous and asynchronous systems, software and hardware, and other forms of multimedia. Teachers use technologies that help them become more effective in their daily work, including electronic gradebooks, desktop publishing, and presentation software. Leadership and Management Application: Teachers develop a broad understanding of technology management and its acquisition at the school and district levels, including access, technology planning, and budgeting. They utilize strategies for becoming advocates of change and for training other educators to use technology in ways that are meaningful and enhance student learning.

Degree Program

In each segment of the degree program, theory and concepts are presented so the student may develop and evaluate management skills. In each course, faculty members combine theoretical concepts with the practical application of usable skills. This 33-credit degree program consists of five (3-credit) core courses; four (3-credit) elective courses; and two (3-credit) specialty track courses.

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Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

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A student may be admitted in one of three classifications: degree seeking, provisional, or decision pending. The decision-pending classification is temporary while students await final approval of admission. The admission requirements for each classification are explained in the following sections.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited university or college, an overall undergraduate GPA of at least 3.0 on a 4.0 scale; submission of the official transcript from the bachelor's-degree-granting institution;

and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

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Provisional Status

Provisional status may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Classification

The decision-pending classification is short term and is meant for students who have not completed the admission process previously described. Students may enroll in the following graduate course before UMUC has received the official transcript from the bachelor's-degree-granting institution: OMED 600. Students must receive an admission decision before subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

Locations

Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations.

Core Courses

OMED 600 3 credits

Foundations of Technology in Teaching and Learning

This course builds on the traditional concepts found in foundations of education courses, but incorporates how technology impacts and advances learning. Issues involving the history and evolution of technological innovations in education, ethics, and the use of technology for testing and assessment are addressed. Detailed topic explorations include collaborative, object-based, and museum learning principles; the integration of technology in the assessment of learning styles; and performance-based and standards-based curricula. Strategies for using technologies with special needs populations are also examined.

OMED 610 3 credits

Digital Information Literacy for K–12 Educators

Expertise is developed in the use and evaluation of a wide array of electronic information resources, including ERIC, LEXIS/NEXIS, Marco Polo, the World Wide Web, and numerous subject-specific databases. Teachers develop a portfolio of electronic references for use in curriculum design. Age and content appropriate exercises and assignments are developed to help build K–12 student information literacy skills. Teachers acquire a working knowledge of information resources in the field of education and in specific content areas to assist them in future curriculum development and research activities. Criteria to evaluate the usefulness and validity of different types of education resources are developed and critically assessed.

OMED 620 3 credits

Web-based Learning and Teaching: Design and Pedagogy

The theory that informs technology-enabled and Web-based education is examined with special attention on best pedagogical practices. Unique challenges related to original design and/or adaptation of Web courses are explored. Participants acquire knowledge and develop skills to create individual assignments, special classes, units, and entire courses that take full advantage of synchronous, asynchronous, and/or multimedia technology. Special emphasis is

placed on creation of age, content, and context appropriate exercises for students in a diverse array of classroom situations. Teachers develop criteria and specific evaluation tools to assess student learning outcomes with different pedagogical approaches, delivery techniques, core content areas, and technologies. Teachers also examine and contribute to current and emerging technology-enabled curricular innovations.

OMED 630 3 credits

Technology in K–12 Education: Synchronous, Asynchronous, and Multimedia Technologies

Serving as the technological foundation of this program, this course enables K–12 teachers to employ appropriate technologies in their classrooms and schools. Teacher-participants critically assess the capacity of a variety of technologies designed to meet specific content, delivery, and learner goals and objectives. Particular attention is paid to Web-based instruction. Teachers develop knowledge and skills in the application of such real time technologies as satellite broadcasting, audio conferencing, video-conferencing, synchronous chats, streaming audio and video, and in asynchronous technologies such as e-mail and listservs.

OMED 680 3 credits

Integrative Capstone Project

In this self-directed project, teachers collaborate with colleagues within or across grade levels or departments to incorporate innovations into their curricula. Throughout the seminar, teachers build a portfolio demonstrating the development, implementation, and outcomes of their project. This is designed as a capstone experience that provides teachers the opportunity to apply previous knowledge and skills gained from other courses in the program.

Note: To be completed at the end of program in consultation with advisor.

Track Courses

OMED 640 3 credits

Using Technology for Instructional Improvement

Teachers learn how to use technology to become more effective in the classroom and more efficient planners. Technologies integral to curriculum and instruction can also enhance teachers' day-to-day activities in classroom administration and management. Topics covered include PowerPoint, database programs, spreadsheets, electronic gradebooks, desktop publishing, portfolio development, and various types of educational software. Practical applications for the contemporary classroom are emphasized.

OMED 650 3 credits

Hardware and Software in Instructional Development

The application of hardware and software programs in K–12 classroom settings is the focus of this course. Teachers gain exposure to a variety of operating systems commonly found in schools. Teachers also experiment with a wide range of instructional software packages in their fields and across subject areas, with a cross-disciplinary emphasis on software for reading instruction and remediation. Issues such as compatibility with curricular goals, appropriateness of use, and student learning outcomes are examined. Teachers complete a project using a specific software application in which they integrate its use in their classroom, assess the

experiences of students as they use the software, and evaluate its effectiveness in achieving their teaching goals and objectives.

OMED 660 3 credits

Administration of Technology Initiatives: Planning, Budgeting, and Evaluation

Teachers gain a broad understanding of the administration of technology in K–12 school systems. The impact of technology in schools is explored from a variety of perspectives, including access, planning, budgeting, maintenance, and life cycle management at the classroom, school, and district levels. Teachers develop and evaluate criteria for making financial and instructional decisions about technology. A particular emphasis is placed on knowledge and skills teachers can use to acquire classroom technology, including grant writing and public-private sector partnerships.

OMED 670 3 credits

Technology Change Management in Schools

Sharing knowledge and building critical technology skills are two central themes of this course. Theories, approaches, and strategies that help teachers assume leadership roles in implementing technology change in K–12 schools are examined. Specific topics include the role of change agents in K–12 schools, strategies to meet the needs of technologically unskilled teachers, tools and techniques to respond to diverse competency levels, and various training models and approaches for adult learners. Teachers employ structured observation to critically assess the effectiveness of various technology training formats. In a guided project, teachers design, develop, and implement a technology-training seminar for delivery to their colleagues.

Specialty Track Courses

OMED 690 3 credits

Special Topics in Instructional Technology

The focus of this course rotates on a semester basis and is designed to address current issues and evolving topics in K–12 instructional technology in depth. Anticipated topics include technological use with special needs populations, technology for performance-based testing and assessment, and technology instruction for reading enrichment.

and

Approved courses in the Master of Distance Education, M.S. in computer systems management, M.S. in telecommunications management, M.S. in information technology, or Master of Software Engineering.

Master of International Management

As the business communities of the world become more intertwined, managers are increasingly challenged by such factors as cultural differences, fluctuating exchange rates, trade regulations, foreign competition, and the opening of world markets. The Master of International Management is an innovative, graduate-level management degree program developed to help mid-career professionals meet these challenges and successfully pursue careers in international business and commerce. The program is designed to fill a void in traditional business education and to help students increase the competitiveness of their organizations.

Degree Program

In each segment of the degree program, theory and concepts are presented so the student may develop and evaluate administrative skills. In each course, faculty members combine theoretical concepts with the practical application of usable skills. This degree program consists of seven (3-credit) core courses, four (3-credit) track courses, and one (3-credit) management project, or, in lieu of the project, the two-course option.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

A student may be admitted in one of four classifications: degree seeking, provisional, certificate, or decision pending. The decision-pending classification is temporary while students await final approval of admission. The admission requirements for each classification are explained below.

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Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited college or university, an overall undergraduate GPA of at least 3.0 on a 4.0 scale, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 33) for information about TOEFL and TWE examinations and evaluation of international education.

Provisional Status

Provisional status may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited college or university, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution,

and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Status

The decision-pending classification is short term and is meant for students who have not completed the admission process described above. Students may enroll in one of the following graduate courses before UMUC has received the official college transcript from the bachelor's-degree-granting institution: IMAN 601, ADMN 630, ADMN 631, or IMAN 605. Students must receive an admission decision before subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

Certificate Program

The Master of International Management program has three certificates related to this discipline. See page 187 for more information.

Area Studies Option

Upon approval of the program director and the dean, students who have language proficiency and experience in a particular region of the world may receive transfer credit for up to two relevant graduate courses taken at another university as substitutes for courses in the IMAN curriculum. Three criteria must be met by the student petitioning to enter the Area Studies option: working knowledge of a language relevant to the region or country in question, demonstrated commitment to the region (nationality, work experience, previous coursework, and so forth), and relevance of the transferred courses to the IMAN curriculum (regional economics, trade, business, and so forth). Other students interested in Area Studies should consider IMAN 661. See the description on page 64.

Locations

Classes in the Master of International Management program are currently offered at College Park. Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations.

Core Courses

IMAN 601 — 3 credits

Strategic Management in a Global Environment

A framework is developed for analyzing the competitive structure of industries, for ascertaining the direction of industry change, and for formulating strategy within an international context. Theories of competition and competitive strategy and methodologies of strategy planning and analysis relevant to the major national and regional business environments are examined. Organizational and functional issues are discussed, including transnational company structures, the role of marketing, finance, trade, technology innovation, and the public-private interface in the formulation of firm strategy.

Note: This course is strongly recommended as the first course for IMAN students.

IMAN 605* — 3 credits

Intercultural Leadership and Communication

Leadership and communication skills are essential for all managers, and applying these skills in an intercultural context is critical for managers operating in a global economy. This course focuses on leadership and decision making as well as organizational communications in a global intercultural environment. Theories of culture are examined and applied as they affect leadership style and practices as well as organizational communication across cultural groups. Team development and leadership will also be explored in an intercultural environment.

IMAN 610* — 3 credits

Economics in a Global Context

Managers need a working knowledge of key economic principles and concepts to fully appreciate the issues they face in the globalizing world economy. This course is intended to be an economics refresher, enabling managers both to understand the complexities of the marketplace and to appreciate the implications of their decisions. From a

**As of fall 2002, IMAN 605 and IMAN 610 replaced ADMN 625 and ADMN 635. Students who have taken both ADMN 625 and ADMN 635 prior to fall 2002 need not take IMAN 605 and IMAN 610. Students who have taken only ADMN 625 or ADMN 635 prior to fall 2001 must take either IMAN 605 or IMAN 610.*

problem-oriented perspective, students will examine how market structure (competitive to monopolistic) is an important determinant of market outcome and how economic systems (open-market to closed-protected economies) affect economic outcomes. Such economic concepts will be examined as: scarcity, opportunity cost, price and income elasticities, income distribution, market failures, role of government, unemployment, inflation, monetary and fiscal policy, comparative advantage, barriers to trade, exchange rates, and the balance of payments.

Note: Students will be expected to know the materials covered in UCSP 621 Economics including inflation, unemployment, recession, supply and demand, opportunity costs, comparative advantage, economic efficiency, and the time value of money.

ADMN 630 3 credits

Financial Decision Making for Managers

This course focuses on financial decision making in business, government, and not-for-profit organizations. Emphasis is placed on the application of financial and nonfinancial information to a wide range of management decisions, including: assessing the financial health and performing a financial analysis of the firm, project analysis using discounted cash flow, product pricing, budgeting, performance measurement, and organizational budgeting principles and techniques. A variety of decision-making tools are employed in the analysis of these decisions. Financial statement and ratio analysis are used in assessing the financial health of the firm. Break-even analysis is used in profit planning. The cost and profitability of individual products and services is determined by activity-based costing/activity-based management procedures. Risk analysis and discounted cash flow techniques are used to compare alternative investment opportunities. The balanced scorecard is employed as a measurement system integrating the use of financial and nonfinancial performance measures.

or

ADMN 631 3 credits

Financial Management in Organizations

This course is the core course for students who choose the Financial Management track and for students who wish to take this course in lieu of ADMN 630. It focuses on financial management theory and applications in business, government, and not-for-profit organizations. Basic accounting concepts and their use in financial statement analysis are discussed. Discounted cash flow and rate-of-return analysis are used to evaluate projects. Break-even analysis is employed to measure the impact of changes in volume and costs. An introduction to scenario analysis, short- and long-term financial management, international finance, and operating budgets and their preparation is provided. Students without recent coursework in accounting or economics are strongly advised to complete UCSP 620 Financial Accounting and UCSP 621 Economics before enrolling in ADMN 631.

Note: Students in the International Finance track must take ADMN 631. Students may not enroll in both ADMN 630 and ADMN 631.

IMAN 615 3 credits

Foreign Investment and Strategic Alliances

An in-depth treatment of the more complex business strategies and transactions for conducting and expanding transnational business operations is offered. Tools of analysis include environmental scanning, stakeholder analysis, and methods for evaluating and managing a variety of strategies in an organizational and transactional context. The topics

discussed include direct foreign investment, foreign subsidiary acquisition, technology transfer arrangements, licensing, franchising, joint ventures, and various types of strategic alliances and partnerships between companies based in different countries.

IMAN 625 3 credits

International Trade and Trade Policy

The theory and conduct of international trade by transnational enterprises are explored. The effects of various multilateral trade agreements are analyzed. The evolution of the Bretton Woods system, the General Agreement on Tariffs and Trade (GATT), and the World Trade Organization (WTO), and the effects of these changes on international businesses are examined. National systems of trade laws and remedies are discussed, in addition to forms of trade and their documentation.

IMAN 650 3 credits

Managing Overseas Operations

This is the capstone course in international management. A wide range of management problems facing both large- and mid-sized enterprises operating internationally is examined in depth. Special attention is paid to an integrative understanding of business functions and managerial control styles in strategy implementation, and to the financial evaluation of strategies and their impact on the organization and structure of international operations.

Prerequisites: Completion of all core and track courses.

End-of-Program Options

IMAN 690 and IMAN 690M 3 credits

Management Project

Students demonstrate their ability to structure and complete a major project that identifies and resolves an important management or organizational issue. Students report the results of their efforts in written and oral form. The project may be developed in cooperation with students' current employers or with some organization of their choice, provided there is no conflict of interest. The project is conducted under the direction of an on-site supervisor in cooperation with a faculty advisor. Students have two semesters to complete the management project.

Prerequisites: Completion of all required and elective courses, including IMAN 650.

Two-Course Option 6 credits

Instead of the management project, students may take two additional courses from the approved list—one interdisciplinary course (3 credits) and one elective (3 credits). Prerequisites apply. The approved courses are as follows:

Elective/Depth Courses

IMAN 661 3 credits

Area Studies: Business Strategies for Europe

Applying marketing and market entry analysis as well as assessing the policy environment, this course enables an in-depth examination of strategies for doing business in the European Union (EU) and, to some extent, adjacent markets in Eastern Europe. Topics include institutional and political infrastructure of the EU; internal market rules governing the movement of goods, services, and capital; market access and trade issues; member state versus EU laws and regulations; market and marketing diversity among member states and their Eastern European neighbors; the different faces of business culture; and the formulation of strategies for U.S. companies interested in entering and undertaking business operations in Europe.

Course sessions will be scheduled on eight Saturdays or online. Students are required to take part in and pay the cost of a 10-day study trip to Europe, which is integral to the coursework. Interested persons should contact the IMAN department chair or program director. Preference will be given to students who have completed all core and track courses. Students without knowledge of marketing will be admitted only by prior arrangement with the IMAN program director or associate director.

International Commerce Track

CSMN 601, TMAN 632 (replaces TMAN 665), TMAN 633 (replaces TMAN 650), TMAN 640, IMAN 661, and ECOM 620.

International Finance Track

IMAN 635, IMAN 640, and IMAN 661

International Marketing Track

IMAN 635, IMAN 645, and IMAN 661

In selecting an interdisciplinary course, students should contact the appropriate program or track director to assure they are capable of performing the coursework.

Interdisciplinary/Breadth Courses

ADMN 626, ADMN 628, ADMN 638, ADMN 655*, ADMN 662, ADMN 664, ADMN 665, CSMN 601, TLMN 602, TMAN 632, or TMAN 640.

**International finance track students only.*

International Commerce Track

The international commerce track is designed for students interested in the broadest range of international management issues. The courses provide a framework for understanding how business operates competitively in both national and international legal and policy environments, and for formulating strategies that reflect the complexities of these business conditions. Courses cover both basic and international aspects of finance, marketing, law, and tax, and examine the relationship between public policy and competitiveness.

IMAN 630 3 credits

International Financial Management

The theory and management of financial systems in international enterprises are examined, including the dynamics of the business system, operating funds management, and the methods of trade finance such as export-import financing and terms of payment. Also considered are the international framework of the monetary system, foreign exchange markets and balance of payment issues, and the role of governments and multilateral banking institutions in national, regional, and international capital markets.

Note: It is strongly recommended that students take ADMN 630 or ADMN 631 before enrolling in this course.

IMAN 635 3 credits

Managing Country Risk

Countries everywhere are seeking to attract foreign investments and, to the extent necessary, to accommodate the forces of globalization. At the same time, enterprise managers are seeking to benefit from globally expanding markets, but are faced with country-specific regulatory regimes, economic systems, cultural patterns, and physical and social infrastructures that often constrain their business agendas. This course provides students with the tools needed to analyze the economic, political, and cultural risks of doing business in various types of country environments and to develop strategies for thriving in the midst of social change. Consideration will also be given to such aspects as stakeholder analysis, varying rules of market competition, human resource development, ethical conflicts, and corporate social responsibility.

IMAN 640 3 credits

International Marketing Management

The fundamentals of marketing and its management in competitive global environments and diverse national economies are discussed. Major topics that are covered include demand analysis, product development, product pricing, marketing organization, foreign representation and distribution systems, promotion, advertising, and sales and service. Regulatory issues related to international marketing are reviewed.

IMAN 645 3 credits

The International Legal and Tax Environment

International business transactions in the context of public and private international law and tax systems are reviewed. Comparative national and regional (European Community) legal systems, and a variety of commercial and corporate

matters such as contract law and the transactional environment of business, are covered. The impact of competing investment laws, national tax issues including the protection of intellectual property rights, and the resolution of disputes through international litigation, arbitration, and mediation are discussed.

International Finance Track

The international finance track is intended for students seeking to exercise managerial responsibilities over the international financial functions of an organization. Financial concepts and methods, which are needed to improve understanding and to promote informed managerial decision making within the context of international transactions and institutions, are provided.

IMAN 645 3 credits

The International Legal and Tax Environment

Note: For a full description of this course, see page 65.

Plus any two of the following three courses:

ADMN 632 3 credits

Financial Management of Current Operations

The primary focus of this course is on the financial management of ongoing operations in organizations. The effects of various credit, inventory, accounts payable, and working capital policies on an organization are examined, as are alternative approaches for meeting short-term cash needs and working capital management. Also covered are short-term investment management and managing interest rate risk. The use of e-commerce applications to manage these functions is illustrated.

Prerequisite: Students must take ADMN 631 before enrolling in this course.

ADMN 633 3 credits

Long-Term Financing of Organizations

The long-term capital needs of an organization and the methods employed to meet those needs are addressed. Students examine and implement the capital budgeting decision process. Various types of long-term funding sources are analyzed, including term loans, debt and equity securities, and leasing. Alternate policies with regard to financial leverage, capital structure, and dividends are evaluated. Scenario and risk analysis are used to appraise alternative capital project opportunities.

Prerequisite: Students must take ADMN 631 before enrolling in this course.

ADMN 634 3 credits

Financial Markets and Investments

Building on the content of ADMN 631, this course provides an in-depth exploration of the financial environment of organizations, the role of financial intermediaries, capital and money markets, types of financial instruments, investment portfolios, and financial derivatives. Students explore alternate sources for raising capital, calculate the cost of capital under different risk conditions, evaluate debt and equity instruments, and construct investment portfolios

using various theories and models. Emphasis is placed on the application of financial decision-making tools for managers.

Prerequisite: Students must take ADMN 631 before enrolling in this course.

ADMN 639 3 credits

Multinational Financial Management

Financial management issues in multinational organizations are the focus of this course. Major topics include the environment of international financial management, foreign exchange markets, risk management, multinational working capital management, and foreign investment analysis. The financing of foreign operations, international banking, and the role of financial management in maintaining global competitiveness are additional issues considered in the course.

International Marketing Track

The international marketing track offers students the opportunity to focus on the various marketing aspects of international management. The courses provide theories and skills that enable managers to analyze domestic and foreign markets and to formulate strategies to competitively position products, services, and programs. The courses also provide an understanding of the management of the marketing function and the integration of marketing policy with the unique demands of international pricing, payment, and financial issues.

IMAN 640 3 credits

International Marketing Management

Note: For a full description of this course, see page 65.

ADMN 687 3 credits

Market Segmentation and Penetration

This course is a study of the cognitive and behavioral bases underlying consumers' buying preferences and decision processes, intended for managers and administrators who have to evaluate the efficacy of the firm's marketing plan. Special emphasis is placed on the role of the communications strategy (for example, advertising, promotion, public relations) in achieving the overall marketing objectives.

As of spring 1999, ADMN 687 replaced ADMN 685. Students who have taken ADMN 685 before that time will not be affected.

or

ECOM 620 3 credits

E-Marketing

The Internet has emerged as one of the most significant forces to affect marketing since the emergence of mass media. This course delves into the technologies and potential applications of the Internet with a focus on developing effective global marketing strategies using the Web as a medium. Web site development, attracting and managing Web site traffic, use of e-mail, Internet regulatory issues, and development of Internet marketing strategies are explored in depth.

IMAN 630 3 credits

International Financial Management

Note: For a full description of this course, see page 65.

IMAN 620 3 credits

International Marketing Research and Analysis

This course presents approaches to marketing research, data collection, and utilization that best serve the practical needs of the international manager. The focus is on the acquisition, analysis, and interpretation of data used in assessing the performance of individuals, work groups, and organizations in a competitive international environment. Methodologies and special topics related to the design and completion of organizational research and evaluation studies are presented, including the survey, observational, and experimental methods of assessing and segmenting markets. Students are introduced to the use of software in the analysis of research data.

Energy Resources Management and Policy Track

The new energy resources management and policy track is designed to provide graduate students with the knowledge of the technologies, economics, and management and policy dimensions of energy systems. Contact Robert Ouellette at 301-985-7824 for more information on this track.

ENER 601 3 credits

Energy Resources

This course focuses on the various energy resources, including renewable (bio-energy, solar, wind, hydro. resources), nonrenewable (coal, oil, gas,) natural resources and nuclear energy. Alternate and future energy sources, including technology-based sources, the development and deployment of alternate technologies, and clean and efficient industrial technologies will also be examined.

ENER 602 3 credits

Energy Economics

This course familiarizes students on the effect of energy and its costs on industry and the national economy. Global markets for energy are examined along with supply, demand, pricing, and market structure. The cost driving mechanisms for energy including investments and competition are also examined.

ENER 603 3 credits

Energy Infrastructure Management

This course focuses on developing management strategies to reduce energy needs, conserve energy resources, and minimize environmental damage. This course shall provide a detailed characterization of the energy infrastructure from exploration to development and production, conversion, distribution, and to end use. Among the topics to be discussed will be the electric network distribution system, liquid and gas transportation via pipelines and/or LNG tankers, and other forms of energy transportation and distribution

ENER 604 3 credits

New Technologies in Energy Management

This course will examine the entire energy cycle from exploration, extraction, conversion, distribution, and use. The application and impact of new technologies, such as three-dimensional seismic methods and horizontal wells) for determining the availability of energy resources, including oil and gas will be examined. Also, new technologies to allow new uses for traditional resources such as conversion of coal to liquid fuel will be analyzed. Research efforts underway to increase the amount and delivery of traditional fuel supplies are also examined.

ENER 646 3 credits

Environmental/Energy Laws and Policy Development

This course will examine U.S. environmental and energy law and policy, including its development, implementation, and enforcement. Legislative, executive, and judicial perspectives and the roles and impacts these institutions have made on environmental and energy law and policy are analyzed. Leading laws and their ensuing policies, such as the National Environmental Protection Act, the Clean Air and Clean Water Acts, the Resource Conservation and Recovery Act, the 1992 National Energy Policy Act, the FDR-era Federal Policy Act, the Public Utility Holding Company Act and the Carter-era Public Utility Regulatory Policy Act will be examined.

Note: Core program courses will provide the primary methods for developing policy in organizations through supplemental reading assignments and the ENVM 646 course.

Master of Science in Accounting and Financial Management

The Master of Science in accounting and financial management is designed for individuals who want to concentrate their graduate studies in finance and accounting as an alternative to a general management or general business-related degree. There is substantial demand in the workforce for professionals and managers who possess specialized skills, knowledge, and abilities in both the accounting and financial management disciplines. The program curriculum provides academic depth in both fields and incorporates coursework in areas such as financial accounting, management accounting, taxation, operating systems, long-term financial management, marketing and investments, multinational finance, and electronic commerce.

The Master of Science in accounting and financial management will provide the student with a thorough understanding of the financial-reporting process, how financial reporting affects financial markets, and how financial information can be used and analyzed to make better investment and market decisions. The vision of accountants as information providers has particular appeal to those who see accounting as useful in corporate decision making and management. Alternatively, accounting can also be seen as a critical element of financial markets.

Degree Program

This 36-credit program is comprised of five (3-credit) accounting courses, five (3-credit) financial management courses, the choice of a breadth course from a related field, and an integrative capstone course. All courses in the program are 3 credits.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

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Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

To be eligible for admission into this program, candidates are required to have completed at least 15 semester hours of prerequisite coursework in accounting, with a "C" or better in each course. Upon completion of this program, graduates will exceed the minimum number of required credits to sit for the Certified Public Accountant (CPA) exam.

A student may be admitted in one of three classifications: degree-seeking, provisional, or certificate. The admission requirements for each classification are explained in the following sections.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited university or college; an overall undergraduate GPA of at least 3.0 on a 4.0 scale, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. In addition, students must possess

a minor in accounting (or earned 15 credits in undergraduate accounting with a "C" or better in each course) from an accredited institution. The UMUC Graduate School reserves the right to request additional transcripts.

Provisional Status

Provisional status may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits, and who meet all other degree requirements, are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Students may also be given provisional status if they have not completed sufficient accounting course work to satisfy the 15 credits of accounting to qualify as Degree Status. A student in this category may take financial management track courses, but must complete the required undergraduate accounting courses before taking accounting courses in the graduate program.

Certificate Program

The Master of Science in accounting and financial management has two certificates related to this discipline. See page 182 for more information.

Locations

Courses in accounting are offered online only. Financial management courses are offered in both an online and face-to-face format. Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations throughout the Washington, D.C. metropolitan area.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 33) for information about the TOEFL and TWE examinations and evaluation of international education.

Prerequisites

Students must possess a minor in accounting (or earned 15 credits in undergraduate accounting with a "C" or better in each course) from an accredited institution.

Accounting

Five of the following six courses:

ACCT 609 — 3 credits

E-Commerce Accounting

The objectives of the course are to assist the accounting student in gaining an understanding of the role he or she plays as an advisor to business in identifying tax choices, payment methods, and strategic e-business alternatives; managing Web security risks for clients; and providing financial advice about the cost of these alternative e-business methods. Importantly, this course will help accounting students achieve a better understanding of how the Web culture is impacting accounting relationships and practices. Among the topics described in the course are e-business models, regulatory environment from privacy to taxation, security in online communications, digital certificates and digital signatures, financial analysis of IT investments, risk identification and assessment, Net mapping, and firewalls. The methods explained in the course are designed to help managers understand the online environment and acquire a knowledge base that will allow them to make more insightful decisions. E-commerce methods are changing so rapidly that it is important to use a number of online references for this course.

Prerequisite: Students must have an undergraduate minor in accounting (or 15 credits of undergraduate accounting courses) with a "C" or better in each course before enrolling in any graduate ACCT course.

ACCT 610 3 credits

Financial Accounting

This course applies accounting theory in a strategic framework. Building on undergraduate accounting studies, the course provides an overview of relevant theory and serves as a foundation for other track courses. Critical thinking and the application of accounting concepts and principles will be developed in the areas of: the preparation and interpretation of corporate financial statements in accordance with Generally Accepted Accounting Principles (GAAP); accounting standards and the standard setting process; the use of electronic technology in financial accounting; effective communication; professional ethics; and current issues, debates and research in accounting. Current special interest topics include the impact of information technology on financial accounting and the valuation of and accounting for intellectual property.

Prerequisite: Students must have an undergraduate minor in accounting (or 15 credits of undergraduate accounting courses) with a "C" or better in each course before enrolling in any graduate ACCT course.

ACCT 611 3 credits

Management Accounting

The control and decision-making methodologies used by management accountants in solving strategic problems for business are examined. Among the methodologies used in the course are break-even analysis, regression analysis, the balanced scorecard, activity-based costing/management, value chain analysis, total quality management, and performance evaluation/assessment. The topics covered range from ethical issues to product costing. All the quantitative methods explained in the course are used to help model business problems in a manner intended to provide the required insights for managers to make successful choices.

Prerequisite: Students must have an undergraduate minor in accounting (or 15 credits of undergraduate accounting courses) with a "C" or better in each course before enrolling in any graduate ACCT course.

ACCT 612 3 credits

Auditing Process

Generally Accepted Auditing Standards (GAAS), as well as standards for attestation and other services, are examined in depth. Alternative audit models are evaluated for both their practical relevance as well as their theoretical justification as informed by current research and emerging information technology. The use of Computer-Assisted Auditing Techniques (CAAT) and other computer-related technology for obtaining evidence is evaluated in terms of its effectiveness and suitability in diverse audit environments. Methods of evaluating internal control are considered in light of the risks encountered in new ways of conducting business, such as e-commerce. Professional ethical and legal responsibilities, as shaped by the contemporary professional, legal, and regulatory environments, are examined as they relate to audit risk, risk assessment, and audit program planning. The use of audit reports and other services as tools to support management control and decision-making are considered. Only students enrolled in the Accounting Track may take this course.

Prerequisite: Students must have an undergraduate minor in accounting (or 15 credits of undergraduate accounting courses) with a "C" or better in each course before enrolling in any graduate ACCT course.

ACCT 613 3 credits

Federal Income Taxation

Federal Income Taxation is a case-study, problem-oriented examination of fundamental federal income tax concepts. The course will conduct in-depth explorations of tax issues and controversies. The course textbook includes many classic court cases, explanatory materials, and problems that examine the application of the federal tax laws to various taxpayer situations. The primary focus of the course is on applying tax laws as opposed to learning individual tax rules. For example, while students might have learned in an undergraduate tax course that gifts are not included in the donee's gross income, students in this course will examine in detail the applicable criteria that determines when an item constitutes a gift. The course stresses methods of case analysis and research that are typically involved in tax planning and litigation. Important definitions, judicially

created rules, and other tax conventions are explored in great detail through the study of each one's genesis and purpose. The course examines prime cases and tax issues that concern gross income, identification of the proper taxpayer, deductions, timing, income and deduction characterization, and deferral and capital gains and losses.

Prerequisite: Students must have an undergraduate minor in accounting (or 15 credits of undergraduate accounting courses) with a "C" or better in each course before enrolling in any graduate ACCT course.

ACCT 614 3 credits

Accounting Information Systems

This course focuses on the use of information systems in the accounting process with an emphasis on computer systems and internal controls. This course will provide the student with the analytical tools necessary to evaluate users' accounting information needs, and to design, implement, and maintain an accounting information system to support business processes and cycles. Among the topics covered are: the components of a contemporary accounting information systems (AIS); security and internal controls, particularly within Internet and e-commerce environments; traditional flowcharting and data-flow diagrams; computer networks; theory and application of relational databases; and relational database management systems (RDBMS). Students design an AIS using a commercial database software package.

Prerequisite: Students must have an undergraduate minor in accounting (or 15 credits of undergraduate accounting courses) with a "C" or better in each course before enrolling in any graduate ACCT course.

Financial Management

ADMN 631 3 credits

Financial Management in Organizations

Note: For a full description of this course, see page 63.

Note: Students may not enroll in both ADMN 630 and ADMN 631. MSAF degree students must enroll in ADMN 631.

ADMN 632 3 credits

Financial Management of Current Operations

Note: For a full description of this course, see page 66.

Note: Students must take ADMN 631 before enrolling in this course.

ADMN 633 3 credits

Long-Term Financing of Organizations

Note: For a full description of this course, see page 66.

Note: Students must take ADMN 631 before enrolling in this course.

ADMN 634 3 credits

Financial Markets and Investments

Note: For a full description of this course, see page 66.

Note: Students must take ADMN 631 before enrolling in this course.

ADMN 639 3 credits

Multinational Financial Management

Note: For a full description of this course, see page 67.

Note: Students must take ADMN 631 before enrolling in this course.

Breadth Course

One of the following:

ECOM 620 3 credits

E-Marketing

Note: For a full description of this course, see page 67.

ECOM 630 3 credits

Information Risk Assessment and Security Management

The proliferation of corporate databases and the development of telecommunication network technology as gateways or invitations to intrusion are examined. Ways of investigating the management of the risk and security of data and data systems are presented as a function of design through

recovery and protection. Issues of risk and security, as they are related to government and specific industries, are major topics in the course. Examples are presented of how major technological advances in computer and operating systems have placed data, as a tangible corporate asset, at risk. Quantitative sampling techniques for risk assessment and for qualitative decision making under uncertainty are explored.

ECOM 640 3 credits

Internet Principles and Applications

This course provides an understanding of EC applications and operations. The course covers technical topics such as the Internet, Intranet, Extranets, portals, and search engines. Students learn the role of Enterprise Resource Planning (ERP) as the e-business backbone, supply- and selling-chain management tools, Customer Relationship Management (CRM), outsourcing, e-procurement, and electronic payment systems. The course covers the fundamental applications associated with electronic payment systems. In addition, the course covers the fundamental applications associated with electronic end-to-end business, including e-mail and other messaging technologies, electronic document management, workflow, data warehousing and data mining, knowledge management, and other decision support systems. Finally, the course covers management issues such as collaboration, strategic alliances, joint ventures, and other methods to achieve strategic advantages and sustained operations.

ECOM 660 3 credits

E-Commerce Financial Management and Accounting

This course focuses on evaluating e-commerce/information technology investments being considered by an organization. The time value of money, discounting techniques, and option pricing principles are applied to EC investment opportunities in a strategic context. Additional topics covered include financial management processes and activities significantly affected by the implementation of EC technologies in organizations, such as accounting systems design, activity based management applications, risk management as it pertains to internal controls, and the use of intelligent agents.

ECOM 670 3 credits

Social, Legal, Ethical, and Regulatory Issues

This course focuses on the protection of intellectual property on electronic networks through trademarks, copyrights, and patents. Privacy and liability issues will be examined in areas that included the handling of e-mail, the electronic dissemination of data and the regulatory requirements for the safeguarding of confidentiality of information. Society's responsibility to provide universal availability of Web-based technologies is considered, and an ethical framework for the development and implementation of EC applications is developed.

IMAN 601 3 credits

Strategic Management in a Global Environment

Note: For a full description of this course, see page 62.

IMAN 625 3 credits

International Trade and Trade Policy

Note: For a full description of this course, see page 64.

IMAN 635 3 credits

Managing Country Risk

Note: For a full description of this course, see page 65.

IMAN 640 3 credits

International Marketing Management

Note: For a full description of this course, see page 65.

IMAN 661 3 credits

Business Strategies for Europe

Note: For a full description of this course, see page 64.

TMAN 632 3 credits

Organizational Performance Management

Organizations of all types are facing increasing pressures to improve organizational effectiveness. Organizations that succeed will be those that anticipate change and develop strategies in advance. This puts a premium on certain performance capabilities such as adaptability, flexibility, responsiveness, decisiveness, speed, quality, value, and customer satisfaction. Organizational effectiveness is defined as an attribute or characteristic of an organization that ensures that appropriate and best products and services are being produced and provided to customers under the most efficient and effective conditions. All aspects of an organization contribute to this. All elements are aligned toward a central goal and are focused on meeting that goal. There is consistency of purpose and the organization actively leverages resources and maximizes human and intellectual capital in achieving high levels of performance. This course brings together the most successful strategies and approaches for achieving a high-performing organization. These strategies and approaches are based on the latest research findings as well as those used by "world-class" organizations. The course covers all the key elements that contribute to high performance and organizational effectiveness. Illustrations and examples of organizations, in both the public and private sectors, that have successfully applied these strategies and approaches are provided throughout the course.

Note: This course replaces TMAN 665.

TMAN 640 3 credits

Project Management

This course explores the theory and practice of how to manage projects. The fundamental elements of project management are stressed, including project planning, organizing, team building, and effective control mechanisms. The key management aspects and proven techniques that differentiate project management from other types of management are fully discussed. These topics include effective project management styles, critical factors for project success, organizational support systems that enhance projects, project authority, and ethics in project execution. Cost, schedule and technical planning, and control methods such as PERT, CPM, variance analysis, TPM, and risk analysis are stressed. Project management software is used for creating a typical project plan and tracking the project.

Capstone

ADMN 619 3 credits

Accounting and Financial Management Capstone

Subject matter from the financial management and accounting track courses is integrated through readings and class discussion. Principles, techniques, and theories are applied through the analysis and presentation of case studies by teams of students. An end-of-course research paper that comprehensively analyzes an important current issue or emerging trend in the fields of financial management and accounting is required.

Prerequisite: Completion of all other program requirements with the exception of the breadth elective.

Master of Science in Accounting and Information Technology

The Master of Science in accounting and information technology is designed for individuals who want to concentrate their graduate studies in accounting with an information technology emphasis. The degree develops accounting and information technology competencies needed to respond to the evolving demands being placed on accountants in modern organizations. Accountants are increasingly called upon to work closely with those in information technology in the design and development of systems specifications, and in the selection and implementation of enterprise systems, and their applications (electronic commerce, activity-based costing modules, data warehouses, standard financial modules, and so on).

The program curriculum consists of a series of accounting courses that provides students with core knowledge in areas such as financial accounting concepts and applications, management accounting methodology, and auditing standards. Supporting technology courses offer both depth and breadth in relevant topic areas such as computer systems, information resource management, electronic commerce, information technology, and technology management.

Degree Program

The 36-credit Master of Science in accounting and information technology is comprised of five accounting courses, three management information systems courses, two technology specialty electives, one breadth elective, and a program capstone course.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

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Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

To be eligible for admission into this program, candidates are required to have completed at least 15 semester hours of prerequisite coursework in accounting with a "C" or better in each course. Upon completion of this program, graduates will exceed the minimum number of required credits to sit for the Certified Public Accountant (CPA) exam.

A student may be admitted in one of three classifications: degree-seeking, provisional, or certificate. The admission requirements for each classification are explained in the following sections.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited university or college; an overall undergraduate GPA of at least 3.0 on a 4.0 scale, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. In addition, students must possess

a minor in accounting (or earned 15 credits in undergraduate accounting with a "C" or better in each course) from an accredited institution. The UMUC Graduate School reserves the right to request additional transcripts.

Provisional Status

Provisional status may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Students may also be given provisional status if they have not completed sufficient accounting course work to satisfy the 15 credits of accounting to qualify as Degree Status. A student in this category may take information technology track courses, but must complete the required undergraduate accounting courses before taking accounting courses in the graduate program.

Certificate Program

The Master of Science in accounting and information technology has two certificates related to this discipline. See page 182 for more information.

Locations

Courses in accounting are offered online only. Financial management courses are offered in both an online and face-to-face format. Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations throughout the Washington, D.C. metropolitan area.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 33) for information about the TOEFL and TWE examinations and evaluation of international education.

Prerequisites

Students must have an undergraduate minor in accounting (or 15 credit hours of undergraduate accounting courses with a "C" or better in each course) with a "C" or better in each course before enrolling in any graduate ACCT course.

Core Accounting Courses

Students must select five courses from this list to complete the 15 credit core requirement:

ACCT 609 — 3 credits

E-Commerce Accounting

Note: For a full description of this course, see page 70.

ACCT 610 — 3 credits

Financial Accounting

Note: For a full description of this course, see page 71.

ACCT 611 — 3 credits

Management Accounting

Note: For a full description of this course, see page 71.

ACCT 612 — 3 credits

Auditing Process

Note: For a full description of this course, see page 71.

ACCT 613 — 3 credits

Federal Income Taxation

Note: For a full description of this course, see page 71.

ACCT 614 3 credits

Accounting Information Systems

Note: For a full description of this course, see page 72.

Note: Students must have an undergraduate minor in accounting (or 15 credits of undergraduate accounting courses) with a "C" or better in each course before enrolling in any graduate ACCT course.

Core Management Information Systems Courses

Students must successfully complete all three of these courses:

ADMN 641 3 credits

Information Systems Management and Integration

This course is organized around the life-cycle perspective of the information system, from inception through systems development and integration, to system operation and maintenance. An overriding concern is the integration of information systems with management systems of an organization. Major phases, procedures, policies, and techniques in the information system life cycle are discussed in detail.

ADMN 643 3 credits

Systems Analysis and Design

This course is designed to combine the areas of management science, computer technology, systems analysis and design and software development, integration and implementation to aid the student in learning current techniques and practices in the requirements specification, software application selection, project management, and analysis and design of information system applications. The course is oriented toward a management perspective in the specification of the information system's logical and physical analysis and design.

ADMN 645 3 credits

Information Technology, the CIO, and Organizational Transformation

This course examines how information technology can affect the strategic direction of an organization, how IT enables new ways of operating, and how the Chief Information Officer can serve as a trusted member of the organization's top management team to help it exploit information technology effectively.

Technology Electives

Students must select two courses for a total of 6 credits:

CSMN 635 3 credits

Systems Development and Project Control

The purpose of this course is to provide a thorough understanding of the systems development life cycle as it applies to large hardware and software systems. The course discusses various approaches to system development, including the traditional waterfall model (system analysis, system design, system implementation, and system use and evaluation), spiral model, and prototyping. Computer-aided software engineering is also examined. An important aspect of this course is the integration of the principles of project management (time, money, and quality) with the discussion of the system development life cycle.

CSMN 636 3 credits

Telecommunications and Connectivity

The fundamentals of data communication systems and technologies are examined. Students explore these technologies from the perspective of the current and future public-switched network, wide area networks, and local area networks. Also addressed are network architectures, networking standards, digital and analog signals, and the various transmission media. Future trends in data communication concepts, equipment, applications, and services, including the open systems interconnection (OSI) model, T-1/T-3 multiplexers, fiber optics, integrated voice/data equipment, "intelligent networks," and the Integrated Services Digital Network (ISDN) are also discussed.

CSMN 655 3 credits

Information Risk Assessment and Security Management

The proliferation of corporate databases and the development of telecommunication network technology as gateways or invitations to intrusion are examined. Ways of investigat-

ing the management of the risk and security of data and data systems are presented as a function of design through recovery and protection. Issues of risk and security as they relate to specific industries and government are major topics in the course. Examples are presented of how major technological advances in computer and operating systems have placed data, as tangible corporate assets, at risk. Quantitative sampling techniques for risk assessment and for qualitative decision making under uncertainty are explored.

Note: Students may take either CSMN 655 or ECOM 630, but not both.

CSMN 661 3 credits

Relational Database Systems

(Revised CSMN 656 Database Processing and Design)

This course introduces the fundamental concepts necessary for the design, use, and implementation of relational database systems. The course stresses the fundamentals of database modeling and design, the languages and facilities provided by database management systems, and the techniques for implementing relational database systems. The course has an emphasis on relational databases, but includes the network and hierarchical data models. Semantic modeling and functional data modeling concepts are also included. Various database design techniques, implementation concepts, and techniques for query optimization, concurrency control, recovery, and integrity are investigated. There will be an online laboratory component for this course.

ECOM 630 3 credits

Information Risk Assessment and Security Management

Note: For a full description of this course, see page 72.

Note: Students may take either CSMN 655 or ECOM 630, but not both.

ITSM 637 3 credits

Information Technology Acquisitions Management

This course explores in detail the principles of information technology (IT) acquisition in a life-cycle context, taking into account best practices in commercial firms and government agencies. Emphasis is placed on the process of determining the relative value and priority of proposed IT acquisition projects, ongoing IT acquisition projects, and in-place IT systems in terms of their expected contribution to the success of the organization. The course explores methods for identifying high-priority areas for applying IT within an organization, establishing IT project assessment criteria, assessing competing IT projects, and making decisions on IT acquisition priorities. The requirements for successfully initiating an IT project and managing and controlling it over its life cycle are considered from various standpoints, including the IT executive's and the non-IT executive's (user's). Also explored are such vital areas as success and risk factors, project management, and sources of information on IT acquisition. The course is applicable to commercial firms, state agencies, and federal government/military organizations seeking to meet requirements for IT capital planning and investment management.

Breadth Electives

Select one course:

ADMN 622 3 credits

Integrative Supply Chain Management

This course covers supply chain issues, techniques, methodologies, and strategies designed to enhance organizational procurement efficiency. The course specifically explores integrated supply chain management as a core competitive strategy that affects the organization's bottom line. In addition, the course deals with integration of information, supplies and materials flows across multiple supply chain channels, and how these flows can be streamlined and optimized for more efficient procurements. Topics covered are: the role of information systems and technology in supply chain management; e-commerce strategies; managing the flow of materials across the supply chain; developing and maintaining supply chain partnerships and other relationships; and future challenges in integrative supply chain management.

ECOM 620 3 credits

E-Marketing

Note: For a full description of this course, see page 67.

ECOM 640 3 credits

Internet Principle and Applications

Note: For a full description of this course, see page 73.

ECOM 660 3 credits

E-Commerce Financial Management and Accounting

Note: For a full description of this course, see page 73.

ECOM 670 3 credits

Social, Legal, Ethical, and Regulatory Issues

Note: For a full description of this course, see page 73.

IMAN 601 3 credits

Managing in a Competitive International Environment

Note: For a full description of this course, see page 62.

IMAN 625 3 credits

International Trade and Trade Policy

Note: For a full description of this course, see page 64.

IMAN 635 3 credits

Managing Country Risk

Note: For a full description of this course, see page 65.

IMAN 640 3 credits

International Marketing Management

Note: For a full description of this course, see page 65.

IMAN 661 3 credits

Business Strategies for Europe

Note: For a full description of this course, see page 64.

TMAN 614 3 credits

Strategic Management of Technology and Innovation

This course provides students with the insight and discipline required to effectively manage technical organizations in an increasingly competitive, rapidly changing, global environment. The course provides a coherent process for the formulation, implementation, and assessment of business strategy, presents a historical framework for the birth, growth, maturation, and decline of business innovation, and finally challenges the students to probe and report their own findings and recommendations on contemporary businesses and industrial sectors.

The strategic framework for this course integrates: a) Strategy setting, implementation, and assessment process; b) Historical analogies/cases of business innovation through maturation lifecycle; and c) Application of lessons learned in contemporary business cases in business, government, and nonprofit organizations.

Note: This course replaces TMAN 605.

TMAN 632 3 credits

Organizational Performance Management

Note: For a full description of this course, see page 74.

Capstone Course

ADMN 618 3 credits

Accounting and Information Technology Capstone

This is the capstone course for the Master of Science in accounting and information technology degree. Subject matter from the financial management and technology courses is integrated through readings and class discussion. Principles, techniques, and theories are applied through the analysis and presentation of case studies by teams of students. An end-of-course research paper that comprehensively analyzes an important current issue or emerging trend in the fields of accounting and information technology is required.

Prerequisite: Completion of all other program requirements with the exception of the breadth elective.

Master of Science in Biotechnology Studies

The Master of Science in biotechnology studies program seeks to provide a thorough grounding in management and policy issues unique to the biotechnology industry. Graduates of the program, regardless of their level of prior technical education, will have a greater grasp of the technologies currently in use in the biotechnology industry. They will understand the regulatory role of federal and state governmental agencies as well as international bodies and professional groups. They will also gain a deeper understanding of the "business of biotechnology," including financial, strategic, and human resource management in the industry. Finally, graduates of the Master of Science in biotechnology studies will have increased knowledge of bioinformatics.

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Degree Programs

The program leads to the degree of Master of Science in biotechnology studies. The curriculum is 36 credits and is divided into a 24-credit core and 12 credits of electives.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

A student may be admitted in one of four classifications: degree-seeking, provisional, certificate, or decision pending. The decision-pending classification is temporary while students await final approval of admission. The admission requirements for each classification are explained below.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited university; an undergraduate GPA of 3.0 on a 4.0 scale; submission of the official transcript from the bachelor's-degree-granting institution; and a personal statement. Knowledge or experience in biology is useful. The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 33) for information about the TOEFL and TWE examinations and evaluation of international education.

Provisional Status

Provisional status may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits and remedy any other unmet admission requirements are moved automatically to degree status. No courses may be repeated while a student is

in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university in physical science, mathematics, or engineering; an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study; submission of the official transcript from the bachelor's-degree-granting institution; and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Students admitted to provisional status will be allowed to register for a minimum of three courses.

Decision-Pending Classification

Decision-pending classification is short term and is meant for students who have not completed the admission process described previously. Students may enroll in one of the elective courses listed (so long as the prerequisites for the course have been met) before UMUC has received the official college transcript from the bachelor's-degree-granting institution. The UMUC Graduate School reserves the right to request additional transcripts.

Certificate Program

The Master of Science in biotechnology studies program has one certificate related to this discipline. See page 179 for more information.

Locations

Classes in the Master of Science in biotechnology studies are offered online and on-site at the College Park and Shady Grove Center sites. Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations.

Core Courses

BIOT 640 3 credits

Societal Issues in Biotechnology

An overview of the early history, modern developments, and bioethical issues of biotechnology is provided. Managerial views of the commercialization of technology, legal issues, biohazards, and the evolution of biotechnology as a function of human interventions are presented. Stress is on the need for public scrutiny and the role of governmental regulatory agencies in researching, developing, and commercializing biotechnology.

BIOT 641 3 credits

Commercializing Biotechnology in Early-Stage Ventures

This course applies the methodologies of technology forecasting, technology assessment, project management, and data auditing to the selection and evaluation of biotechnology projects. The underlying rationale, principles, procedures, and cost effectiveness of data auditing are examined. A systems approach to performance evaluation is presented. Managing the safety aspects of biotechnology is stressed.

Note: Students are encouraged to take TMAN 640 Project Management before or concurrently with this course.

BIOT 642 3 credits

Selection and Evaluation of Biotechnology Projects

This course applies the methodologies of technology forecasting, technology assessment, project management, and data auditing to the selection and evaluation of biotechnology projects. The underlying rationale, principles, procedures, and cost effectiveness of data auditing are examined. A systems approach to performance evaluation is presented. Managing the safety aspects of biotechnology is stressed.

Note: Students are encouraged to take TMAN 640 Project Management before or concurrently with this course.

BIOT 643 3 credits

The Techniques of Biotechnology

This course offers a comprehensive review of the technologies in use today in biotechnology research and applications. The students will be exposed to modern techniques used in genetic engineering, sequencing, cloning, and so forth. The development and use of these techniques will be placed in a historical context.

BIOT 644 3 credits

The Regulatory Environment of Biotechnology

This course provides a comprehensive review of the role of regulation in biotechnology products and services development and commercialization. The role of the federal government, state government agencies, international bodies, and professional groups will be emphasized. Specifically, the regulatory role of the U.S. Environmental Protection Agency (EPA), the U.S. Department of Agriculture (APHID), the Department of Labor (OSHA), and the Department of Health (specifically NIH) will be emphasized. The role of good laboratory practices and good manufacturing practices will be analyzed.

BIOT 645 3 credits

The Business of Biotechnology

This class introduces students to the range of businesses associated with biotechnology. These businesses include medical procedures, self-testing procedures, pharmaceutical, reagents, agriculture, environmental bioremediation, energy production, material and mineral recovery, veterinary medicine, and sensors. The course covers a variety of alliances and funding sources as well as global and international issues.

BIOT 646 3 credits

Bioinformatics

Efficient experimental techniques have led to an exponential growth of data in biotechnology. Today, the emphasis is switching from the accumulation of data to their analysis and interpretation. Computational tools for classifying sequences, large databases of biological information, computationally intensive methods, new algorithms, and machine learning unite to extract new concepts.

This is the domain of bioinformatics. Specifically, the domain of bioinformatics includes new sophisticated DNA, RNA, and protein sequence analyses and pattern recognition and DNA computing, but also more traditional mathematical modeling, Bayesian probability and basic algorithms, machine learning and neural networks, and Markov models and dynamic programming. Bioinformatics covers many subjects, among the most important are the analysis of macromolecular sequences, tridimensional structures, phylogenic relationships, and genomic and proteomic data.

BIOT 671 3 credits

Biotechnology Studies Capstone

The capstone course integrates all the knowledge accumulated through the previous courses into the concept of the business cycle. The course focuses on best practices as demonstrated through case studies. Students develop a comprehensive business plan or market plan for a new biotechnology venture for a real company. This course also integrates business and technical crosscutting issues such as learning organization, entrepreneurship/intrapreneurship, creativity, and innovation on the business side and technology trends, terrorism, bioethics, ontologies, nanotechnology on the technical side.

Note: Students may enroll in this class only after completing at least 27 of the required 36 credits (including all 21 credits of the other core courses).

Elective Courses

Students may fulfill the elective requirement by selecting four courses from the following:

TMAN 610 3 credits

Economics and Financial Analysis for Technology-Based Organizations

This course explores the fundamental concepts of economics and financial analysis and provides a comprehensive coverage of these concepts as related to technological projects. Topics covered include time value of money principles, cost estimating, present and future worth techniques, cash flow computation, nominal and effective interests, rate of return, and benefit-cost analysis. Students apply these concepts and techniques that form the fundamental basis for economic analysis to the "real world" cases. The necessary tools and techniques for analyzing and solving economic analysis problems that team members and project managers commonly face in selecting the best alternatives are investigated. Furthermore, cases of how these techniques are applied to make better decisions in both public and private sectors are examined.

TMAN 611 3 credits

Principles of Technology Management

This course is an overview, introducing students to the key concepts in technology management and the role of technology managers in both private- and public-sector organizations. It provides an understanding of how organizational entities can be structured and managed to respond effectively to dynamic changes caused by technology and international competition. The key cycles in the development of technology are covered from a historical perspective, including their impacts on the economy, industrial sectors, and organizational strategy and survival. Management is examined from both a process and system perspective. The major technical, social, legal, and ethical issues in innovating and implementing technology are presented.

Note: This course replaces TMAN 601.

TMAN 612 3 credits

Financial Management for Technology Managers

This course provides an in-depth overview of the financial and managerial accounting in technology-based organizations. Students are introduced to the preparation of a variety of financial analysis tools from simple balance sheets to activity-based costing. The principles of financial accounting that underlie the preparation and presentation of financial statements are examined. The basis of asset valuation and allocation is discussed, including capital and technological assets, intellectual property, and other important intangibles. Topics include economic concepts, cost of capital, cost management, capital budgeting, product costing and pricing, financial controls for strategic purposes, and using budgets to achieve organizational goals both in public and private sector organizations.

Note: An accounting background is strongly recommended before registering for this course or students should register for UCSP 620 Financial Accounting before registering for TMAN 612.

Note: This course replaces ENGM 610 only in the TMAN program.

TMAN 613 3 credits

Marketing Technology-Based Products and Services

The methods and principles of marketing new technology-based products and services are introduced with a focus on innovative strategies for bringing them to market. The issues of competitive strategy, pricing, customer service, market differentiation, and new product launches are presented. The strategic role of marketing as an integrated part of the product development process and its role in the overall strategic planning of the firm is discussed. Qualitative and quantitative market research techniques, including sampling and data collection procedures, demand forecasting, and product research and test marketing are presented.

TMAN 614 3 credits

Strategic Management of Technology and Innovation

Note: For a full description of this course, see page 79.

TMAN 632 3 credits

Organizational Performance Management

Note: For a full description of this course, see page 74.

TMAN 633 3 credits

Human Resource Issues in Technology-Based Organizations

Regardless of the size and purpose of the organization and the technology involved, people are the common denominator when facing information-based global economy. Success or failure hinges on the ability to attract, develop, retain, and motivate a diverse array of knowledgeable and skilled workforce.

The purpose of the course is to understand and appreciate the value of effective management of people in a variety of organizational settings, and to provide the tools, methods, and approaches to do so. The major focus of the course is to help students understand and influence performance in organizations by showing the linkage between contemporary organizational behavior theories and their application. This application linkage relies on real life examples, current events, and case studies. This approach enables students to

understand organizational behavior concepts and apply them to technology-based organizations.

The course focuses on three levels of managing behavior in organizations: managing individual employees; managing groups and relationships; and managing behavior across the organization. In addition, the course covers emerging organizational behavior topics facing technology-based organizations, such as managing a global workforce, virtual organizations and teams, contingent workforce management, managing creativity/innovation, socio-technical work systems, developing learning organizations, emotional intelligence, situational leadership, and pay/retention strategies.

Note: This course replaces TMAN 650.

TMAN 636 3 credits

Knowledge Management

This course presents a holistic and coherent view of knowledge management (KM) from multidisciplinary perspectives. The human and technological dimensions of knowledge management are examined. This course provides students with hands-on techniques and tools for managing knowledge at both public and private sector organizations. The formulation and selection of the most competitive KM strategy and its integration with the organization's overall business strategy is explored in depth. The course highlights the tools used both to successfully implement the KM strategies and to measure their progress. The selection and deployment of the appropriate technological infrastructure to facilitate the KM initiative is investigated. Furthermore, students will explore how knowledge can effectively be managed in the fast moving technologically sensitive and knowledge intensive corporate environment of the 21st century.

TMAN 640 3 credits

Project Management

Note: For a full description of this course, see page 74.

TMAN 661 3 credits

Systems Development and Management

The purpose of this course is to provide a thorough understanding of the systems development life cycle as it applies to different technological systems such as information systems, biotech systems, e-commerce systems, and organizational systems. These systems generally have multiple, interdependent subsystems, which interact in complex ways. The methods of systems lifecycle analysis and planning, systems management, systems development and strategic decision-making will constitute the major content of the course. Students will demonstrate their mastery of the course material by developing systems development and management strategies in response to a series of real-world case study scenarios.

Note: This course replaces TMAN 631 Operations Management.

Bioinformatics Practice Track

The new bioinformatics practice track is designed for graduate students with interest in molecular biology and information technology. The track covers a broad range of subjects at the interface between these two fields, and provides students with hands-on experience using various tool kits, software packages, and databases to solve practical problems. The 5-course track includes BIOT 610, BIOT 613, BIOT 615, BIOT 616, BIOT 617.

The track is designed to augment the following master's programs: environmental management, international management, management, technology management, and the dual technology management/MBA. The track courses will also be available as electives to other programs in the Graduate School.

In addition to completing the above five core track classes, students must complete seven additional classes from the

biotechnology studies program for a total of 12 classes, or 36 credits. Contact Robert Ouellette at 301-985-7883 for more information on this track.

Core Courses

BIOT 610 3 credits

Introduction to Bioinformatics

(formerly BIOT 646)

This class provides an overview of the field, its definition, history and evolution. The class focuses on applications such as gene discovery, drug design and targeting, microarrays, and philogeny. A basic introduction to the science of bioinformatics is provided including sequence alignment, homology, motif and pattern detection, microarrays, gene identification, protein prediction, and protein structure. The student will become familiar with existing databases, software packages and tools kits used in bioinformatics.

BIOT 613 3 credits

Statistical Processes for Biotechnology

This class focuses on Baysian statistics, Markov processes and information theoric indices. Knowledge of basic statistics is assumed. These statistical tools can be used to analyze inheritance patterns (dominance, recession, sex linkages, and so forth), sequence homology, and the presence of motifs in sequences. A number of concepts will be introduced including information content, mutual information, long-range correlation, repeats, and Fourrier analysis. Linguistic methods will be evaluated.

BIOT 615/CSMN 661 3 credits

Relational Database Systems

This course introduces the fundamental concepts necessary for the design, use, and implementation of relational database systems. The course stresses the fundamentals of database modeling and design, languages and facilities provided by database management systems, and techniques for implementing relational database systems. The course has an emphasis on relational databases, but includes the network and hierarchical data models. Semantic modeling and functional data modeling concepts are also included. Various database design techniques, implementation concepts, and techniques for query optimization, concurrency control, recovery, and integrity are investigated. There will be an online laboratory component for this course.

BIOT 616/CSMN 614 3 credits

Algorithms, Combinatorics, and Graph Theory

This class introduces students to the theory and practice of algorithms, combinatorics and graph theory. These techniques can be applied to network design, optimization and minimization solutions, string storing, sorting and other manipulations. These algorithms can be used for data modeling, mapping, and computational geometry in genomics and protenomics. The class will foster the understanding of several fundamental algorithm design techniques including data structure, dynamic programming, depth-first search, backtracking and heuristics.

BIOT 617 3 credits

Advanced Bioinformatics

Students are given the basic programming tools for performing bioinformatics analyses in both the Unix and MS DOS/Window environments. The class focuses on the use of Perl and Bioperl as the basic programming tools. Students develop and practice basic programming skills on such problems as codon usage/bias, open reading frame, CpG islands detection, and gene identification.

Master of Science in Computer Systems Management

As organizations become increasingly interdependent and interconnected in the 21st century, the need for trained specialists to develop and streamline a global information infrastructure will grow exponentially. The Master of Science in computer systems management (CSMN) provides educational opportunities for such information professionals. The program serves the needs of programmers, developers, engineers, and other knowledge workers who aspire to move into technical leadership positions. The emphasis is on moving technology out of the laboratory and into business development, defining the role of information literacy in decision making, and exploiting information technologies for productivity and competitiveness. The program is rich in real-life assignments and case studies.

(See also the Executive Master's Program in information technology. The executive program is offered in an accelerated seminar format with Saturday classes.)

Degree Program

In each segment of this 36–39 credit degree program, theory and concepts are presented so the student may develop and evaluate managerial skills. In each course, faculty members combine theoretical concepts with the practical application of usable skills. This degree program consists of the following: five (3-credit) core courses, two (3-credit) electives, four (3-credit) track courses, and one (3-credit) management project or, in lieu of the project, the two-course option.

Students may choose one of four tracks:

- Database Systems Technologies
- Information Assurance
- Information Resources Management
- Software Development Management

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Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

National Defense University

Students who have completed the Advanced Management program or the Chief Information Officer Certificate program at the National Defense University Information Resources Management College (IRMC) may transfer 15 credits in partial satisfaction of the Master of Science in

computer systems management degree (subject to Graduate School time limits of 7 consecutive years) to replace CSMN 601, TMAN 612, TMAN 614, TMAN 632, and one elective. Students must apply and meet the established admission criteria for the CSMN program. Interested students should call either an IRMC or a Graduate School advisor.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

A student may be admitted in one of four classifications: degree seeking, provisional, certificate, or decision pending. The decision-pending classification is temporary while students await final approval of admission. The admission requirements for each classification are explained in the following sections.

Degree Status

Degree status is granted to students enrolled in the database systems technology track, information assurance track, information resources management track, or software development management track who meet or exceed the following criteria: a bachelor's degree from a regionally accredited university or college, an overall undergraduate GPA of at least 3.0 on a 4.0 scale, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Degree status is granted to students in the applied computer systems track who meet or exceed the above criteria and, in addition, have at least one undergraduate semester of calculus (that is, Calculus I) completed with a minimum grade of "C" or equivalent proficiency as determined by the program director.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 33) for information about the TOEFL and TWE examinations and evaluation of international education.

Provisional Status

Provisional status may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits will be moved automatically to degree status, provided they meet all prerequisites. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are as follows: a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Classification

The decision-pending status is short term and is meant for students who have not completed the admission process described previously. Students are encouraged to enroll in one of the following graduate courses before UMUC has received the official college transcript from the bachelor's-degree-granting institution: CSMN 601, TMAN 612, or TMAN 632. Students must receive an admission decision before subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

Certificate Program

The M.S. in computer systems management program has five related certificates. See page 184 for more information.

Locations

Classes are currently offered at College Park, the University System of Maryland Shady Grove Center in Rockville, and online. Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations.

Core Courses

CSMN 601 3 credits

Issues, Trends, and Strategies for Computer Systems Management

A study of the technological advances in computer systems and in the many environments affected by advancing technology is presented. Problems relating to ethics, security, the proliferation of databases, risk analysis, telecommunications, artificial intelligence, and human-machine interaction are examined. The rapid development of computer-based information systems in response to management needs, as well as trends and developments in the field, are discussed.

Note: This course is strongly recommended as the first course for CSMN students.

TMAN 612 3 credits

Financial Management for Technology Managers

Note: For a full description of this course, see page 83.

TMAN 614 3 credits

Strategic Management of Technology and Innovation

Note: For a full description of this course, see page 79. Replaces ADMN 603.

TMAN 632 3 credits

Organizational Performance Management

Note: For a full description of this course, see page 74.

ITSM 670 3 credits

Information Technology (Capstone)

This course integrates and applies the major concepts presented in all other coursework. Using casework methods, students will identify best practices and appropriate technologies to implement effective IT decisions aligned with organizational goals. Strong emphasis is placed on viewing information technology issues in a context of both day-to-day and strategic management decision making based on applied research. Issues include competitiveness, information architecture, user needs, process reengineering, value chain management, collaborative computing, globalization, social impact, information policy, and ethics. Emerging trends in information technology are analyzed to understand their potential effect on the workplace and society.

Prerequisites: 27 semester hours of graduate coursework.

Elective Courses

Students must select one or two elective courses (only one for DST and IA track students) from CSMN specialty tracks, TLMN, TMAN, ADMN 644, ADMN 645, CSMN 614, or CSMN 639.

CSMN 614 3 credits

Data Structures and Algorithms

This course introduces the definitions, implementations, and applications of the basic data structures used in computer science, including the concept of abstract data types. The course also introduces the basic formalism and concepts used in the analysis of algorithms and in algorithm design. The relative efficiency of the algorithms studied is estimated by informal application of these ideas. The algorithms and data structures discussed include those for sorting, searching, graph problems, dynamic programming, combinatorial search and others.

CSMN 639 3 credits

Multimedia and the Internet

Multimedia presentations are regarded as essential, strategic components of an organization's competitive advantage via its World Wide Web presence. Established principles of software development life cycles, aesthetics of typography and layout, benchmarking, and human factors research are applied to analyzing and critiquing Web sites as well as writing successful Web site development plans. Site management issues and consumer research methods are surveyed. The course's technical component emphasizes basic Web page design techniques, standards for representing common media formats in data files, compression algorithms, file format translation tools, transmission protocols, hardware requirements and standards, and system constraints. Java,

CGI scripts, virtual reality, and other ancillary methods are touched upon, but no programming is required.

Note: This course cannot be completed using UMUC computer laboratory facilities. It requires a current multimedia PC with ample hard disk capacity and Internet connectivity. CSMN 601 or TLMN 602 is a prerequisite for this course; CSMN 636, TLMN 610, or TLMN 620 are desirable precursors.

End-of-Program Option

Management Project

CSMN 690 3 credits

and CSMN 690M (if needed) 1 credit

Students demonstrate their ability to structure and complete a major project that identifies and resolves an important management or organizational issue. Students report the results of their efforts in written and oral form. The project may be developed in cooperation with students' current employers or with some organization of their choice, provided there is no conflict of interest. The project is conducted under the direction of an on-site supervisor in cooperation with a faculty advisor. Students have 2 semesters to complete the project.

Prerequisite: ITSM 670.

Two-Course Option

Instead of the management project, students may take two additional courses from the approved list—one interdisciplinary/breadth course (3 credits) and one depth course (3 credits).

Interdisciplinary/Breadth Courses

ADMN 625 3 credits

Organizational Communication

This course investigates the theories and research related to communication and group development within modern organizations. It examines definitions, models, and barriers, including structural, psychological, and technological factors. It investigates current issues, such as the impact of the global environment, cultural diversity, and virtual environments. It includes strategies and methods for managing conflict and managing change. Interpersonal, small group, and large group settings are addressed. Managerial application of the concepts is stressed.

ADMN 635 3 credits

Organizational Leadership and Decision Making

The overriding theme of this course is that the ability to lead and make decisions in an environment of continual change is crucial for the 21st century. Thus, this course focuses on four aspects of leadership: theory and research, individual and team perspectives, judgment and managerial decision making, and the global environment.

Approaches to leadership such as power-influence, situational factors, individual traits, and behaviors are explored, as are various models of decision-making theory. Issues such as the relationship of management to leadership, the value of participative and charismatic leadership, the leader's role in organizational culture and organizational change, and the impact on diversity, are investigated from domestic and international perspectives. The increasing role of teams in organizational life and the ability to apply good judgment to decisions that pertain to supervisory, participatory, and team-leadership principles at appropriate points are discussed.

ADMN 638 3 credits

Research Methods for Managers

ADMN 638 presents techniques and methodologies related to the evaluation and utilization of organizational research and evaluation studies in making business decisions. Emphasis is placed on preparing the student to evaluate and utilize research-based information developed by other individuals. The focus of the course is on the analysis and interpretation of research-based materials in assessing the performance of individuals, work groups, and organizations. Areas of coverage include principles of good research design, measurement, appropriate sample size, evaluating research instruments, reviewing procedures for collecting and analyzing data, and evaluating and utilizing existing research-based materials in solving business problems. ADMN 638 provides the student with the approaches and skills necessary to evaluate research-based materials and their

utilization in business decision making. This course provides the student with various approaches to data collection (including the Internet) and utilization that best serve the practical needs of the manager.

ECOM 610 3 credits

Introduction to E-Commerce

The rapid growth of e-commerce (EC) affects the way lines of business and every functional group are run within an enterprise. This introductory course provides an overview of both the strategic and the technical essentials of what managers need to know in order to manage and lead an EC initiative. Topics covered include: definitions of EC; a brief history of EC; EC business models; the role of technology; economics of information goods; virtual value chain; electronic markets; impact of EC on organizational strategy and industry structure; in-depth assessment of successful EC strategies; legal, social, ethical, regulatory, and other emerging issues related to EC; and electronic communities and virtual organizations. The course also presents an outline of the technologies that enable EC, including telecommunications technology trends, portals and search engines, Web site design and management, EDI and XML, electronic payment systems and security, Web access to databases, ERP and CRM software, and EC servers.

ECOM 620 3 credits

E-Marketing

Note: For a full description of this course, see page 67.

ECOM 670 3 credits

Social, Legal, Ethical, and Regulatory Issues

Note: For a full description of this course, see page 73.

IMAN 601 3 credits

Strategic Management in a Global Environment

Note: For a full description of this course, see page 62.

IMAN 625 3 credits

International Trade and Trade Policy

Note: For a full description of this course, see page 64.

IMAN 635 3 credits

Managing Country Risk

Note: For a full description of this course, see page 65.

IMAN 661 3 credits

Area Studies: Business Strategies for Europe

Note: For a full description of this course, see page 64.

TMAN 633 3 credits

Human Resource Issues in Technology-Based Organizations

Note: For a full description of this course, see page 83.

Depth Courses

Students should select any other CSMN course or a course from TLMN (except ITSM 670, formerly TLMN 660) or a course from among MSWE 645, MSWE 646, MSWE 647, or MSWE 648.

Applied Computer Systems Track (ACS)

The applied computer systems track focuses on the knowledge and skills associated with managing computer systems in organizations. The track provides students with an understanding of hardware and operating systems, distributed computing, principles of programming languages, and knowledge-based systems. The track applies to tactical and operational managers interested in formal computer systems training, manufacturing/engineering workers interested in system and process enhancement through modern automation techniques, and business professionals with needs in applied computer systems education.

Track students must take the following four courses:

CSMN 615 3 credits

Hardware and Operating Systems

Interrelationships between hardware and software from technical, operational, and system points of view are examined. An architectural review of selected hardware systems, virtual memory management, operating systems, disk performance optimization, analytic modeling, and distributed operating systems is presented.

CSMN 616 3 credits

Distributed Computing

Topics central to the design and management of distributed computing systems, including distributed synchronization and resource sharing, concurrency control in distributed databases, distributed simulation languages for distributed computing, management proof techniques for distributed systems, and distributed operating systems, are covered.

Prerequisite: Calculus I or equivalent.

Recommendation: To be preceded by CSMN 615.

CSMN 617 3 credits

Principles of Programming Languages

The course explores the theory and implementation of modern programming languages. Topics include the attributes of a good language, programming environments (for example, batch, interactive, real-time, network, and embedded systems), language syntax, various grammar types, data types, object-oriented structures, sequence control, subprogram control, and parallel programming. The properties of programming languages are illustrated using examples from current languages such as Fortran, Cobol, C, C++, Pascal, Ada, Prolog, and Java.

Prerequisite: Calculus I or equivalent.

CSMN 618 3 credits

Knowledge-Based Systems

This course covers the identification, creation, and use of knowledge-based systems from an applied approach. Cognitive science, formal logic, and finite automata are highlighted throughout. The course starts with an overview of intelligent systems and concludes with a hands-on intelligent system created as a class product. Using the case-study approach, the course explores the art of knowledge acquisition and crafting of domain-specific, knowledge-based applications using various processing technologies with representation methods.

Prerequisite: Calculus I or equivalent.

Recommendation: To be preceded by CSMN 617.

Database Systems Technologies (DST)

The database systems technologies track will focus on the design, development, and management of database technologies. While the primary focus will remain on relational databases, object-relational and object-oriented databases are important components of the track. Laboratory experiences are included in most courses. Track students must take all five courses listed below:

CSMN 661 3 credits

Relational Database Systems

(Revised CSMN 656 Database Processing and Design)

Note: For a full description of this course, see page 78.

CSMN 662 3 credits

Advanced Relational/Object-Relational Database Systems

Building on the foundation established in CSMN 661, advanced concepts are explored in this course. The course provides students with advanced knowledge in logical design, physical design, performance, architecture, data distribution, and data sharing in relational databases. The concepts of object-relational design and implementation are

introduced and developed. There will be an online laboratory component for this course.

Prerequisite: CSMN 661 or equivalent.

CSMN 664 3 credits

Object-Oriented Database Systems

(Revised CSMN 657 Advanced Database Applications)

This course will offer both theory and applications of object-oriented database systems. Conceptual frameworks for data abstraction, encapsulation, inheritance, polymorphism, extensibility, generic programming, information hiding, code reusability, modularity, and exception handling will be studied. The course will provide students with an overview of both existing object-oriented databases (OODB), including examples of their use and comparison of their strengths and weaknesses, and emerging OODB concepts and systems. After a survey of OODBs, three representative ones are selected for closer scrutiny. C++ will serve as the primary data manipulation language. A brief overview of the language, its power, and its limitations is presented.

Prerequisite: CSMN 661 or equivalent.

CSMN 665 3 credits

Data Warehouse Technologies

This course will introduce the concepts needed for successfully designing and implementing a data warehouse. The course provides the technological knowledge base for data model approaches such as the star schema and denormalization, issues such as loading the warehouse, performance challenges and other concepts unique to the warehouse environment. This course will include an online laboratory component.

Prerequisite: CSMN 661 or equivalent.

CSMN 666 3 credits

Database Systems Administration

This course will introduce the knowledge, skills, and tools needed to successfully administer operational database systems. The course provides the conceptual and operational tools for analysis and resolution of problems such as performance, recovery, design, and technical issues. Tools used to assist in the administration process will be included.

Prerequisite: CSMN 661 or equivalent.

Information Assurance Track

The information assurance track deals with theory and topical issues, both technical and managerial, in the fields of information systems security and overall information security. The track provides a thorough knowledge base for managers and technology professionals concerned with the development and operation of secure information systems and with the protection of an organization's information assets. The track provides students with a practical understanding of the principles of data protection, network security, and computer forensics. The track also introduces the students to the policy, ethical, and legal issues associated with information security.

UMUC has been designated a National Center of Academic Excellence in Information Assurance Education by the National Security Agency.

Track students must take the following five courses:

CSMN 655 3 credits

Information Risk Assessment and Security Management

Note: For a full description of this course, see page 77.

CSMN 681 3 credits

Cryptology and Data Protection

This course traces the historical development of cryptographic methods and cryptanalysis tools. The theory of encryption using symmetric and asymmetric keys is presented. Current protocols for exchanging secure data, including the Data Encryption Standard and the Advanced Encryption Standard, are discussed. Secure communications

techniques are also reviewed. Public Key Infrastructure and the use of digital signatures and certificates for protecting and validating data are examined. The course also explores strategies for the physical protection of information assets.

Prerequisite: CSMN 655.

TLMN 672 3 credits

Network and Internet Security

Security concepts needed for the design, use, and implementation of secure voice and data communications networks, including the Internet, are introduced. The course provides an overview of networking technology and standards including an introduction to the Internet communications protocols. Specific security subjects addressed include firewalls, packet filtering, virtual private networks (VPNs), wireless network security, and operating system security.

Prerequisite: CSMN 636, CSMN 655, or any TLMN specialization course.

CSMN 683 3 credits

Intrusion Detection, Incident Response, and Computer Forensics

The theory, skills, and tools needed in intrusion detection and computer forensics are the major themes in this course The course discusses techniques for identifying vulnerable target systems and types of malicious code, for mitigating security risks, and for recognizing attack patterns. It also presents the conceptual and operational tools necessary for analysis and resolution of problems with respect to effective filters and firewalls, attack tracing, system recovery, continuity of operation, evidence collection, evidence analysis, and prosecution.

Prerequisite: TLMN 672.

CSMN 685 3 credits

Security Policy, Ethics, and the Legal Environment

This course assesses the information security environment within which organizations function today. The course reviews how, at the national level, policy continually evolves through administration initiatives and legislative debate. Information security responsibilities of major domestic and international agencies, such as the Federal Bureau of Investigation, the National Security Agency, and the National Institute of Standards and Technology are reviewed. Issues involving information security management within the enterprise are covered, including suitable organizational policy, plans, and implementation strategies. Ethical issues, such as monitoring employee computer use and proper limitations on the use of customer data are also discussed.

Information Resources Management Track (IRM)

The information resources management track is concerned with the combination of computing, telecommunications, office automation, records management, and newer technologies such as multimedia and document imaging. The IRM track is intended for federal ADP management and acquisitions personnel as well as those who work in the private sector. Because various agencies differ in their interpretation of IRM, the track has a great deal of flexibility, allowing students to tailor it to their specific needs.

Track students must take the following three courses plus one elective from the approved degree program.

CSMN 635 3 credits

Systems Development and Project Control

Note: For a full description of this course, see page 77.

CSMN 636 3 credits

Telecommunications and Connectivity

Note: For a full description of this course, see page 77.

ITSM 637 3 credits

Information Technology Acquisitions Management

Note: For a full description of this course, see page 78.

Plus one elective:

One course (3 credits) chosen from

TMAN, TLMN, another CSMN track, or ADMN 645.

Individual course prerequisites apply.

Software Development Management Track (SDM)

The software development management track is designed for software development professionals and technical managers who are interested in the entire software life-cycle process. These courses are also part of the MSWE program, and they include both formal and "real life" descriptions of software requirements, development, validation, and maintenance concepts. This track provides the technical knowledge to complement the management concepts contained in the CSMN core courses.

Track students must take the following four courses:

MSWE 645 3 credits

System and Software Standards and Requirements

Major models of software requirements and specifications (sequential and concurrent systems), existing software standards and practices, and formal methods of software development are examined. A comparative survey of various languages and methods serves to emphasize similarities and significant differences. Additional topics covered include writing system and software requirements, formal specification analysis, formal description reasoning, models of "standard" paradigms, and translations of such models into formal notations.

Prerequisite: MSWE 601 or CSMN 601 or permission.

MSWE 646 3 credits

Software Design and Implementation

This course guides the student in the transition from programming-in-the-small to programming-in-the-large. Software development processes and the role of design as applied in those processes are discussed. Major design methods and available computer-aided software engineering (CASE) tools, the proper application of design methods, and techniques for estimating the magnitude of the development effort are reviewed. Strengths and weaknesses of the development methods are covered, along with traceability to requirements and code.

Prerequisite: MSWE 601 or CSMN 601 or permission.

MSWE 647 3 credits

Software Verification and Validation

The evaluation of software for correctness, efficiency, performance, and reliability is addressed. Specific skills covered include program proving, code inspection, unit-level testing, and system-level analysis. The difficulty and cost of some types of analysis are examined in addition to the need for automation of tedious tasks. Problem-solving skills are stressed, especially in analysis of code. The textbook world is contrasted with the real world using case studies from the book and personal experiences. Industry attitudes toward reliability and performance are also discussed.

Prerequisite: MSWE 601 or CSMN 601 or permission.

MSWE 648 3 credits

Software Maintenance

This course provides a guide for the transition from programming for the short term to programming for the long term. The role of creation and maintenance in the software development process as well as analysis and implementation of a software design is reviewed. The need for software maintenance and evolution, software maintenance process and performance issues, planning for extended software life, and effective mechanisms to control software change are additional topics of discussion.

Prerequisite: MSWE 601 or CSMN 601 or permission.

Master of Science in Electronic Commerce (E-Commerce)

The Master of Science in electronic commerce degree program introduces participants to the critical competencies and skills needed to effectively identify, develop, and implement e-commerce business strategies in various types of organizations. These competencies and skills are developed using several key themes incorporated throughout the program in the core curriculum, which consists of: Technology-Driven Change; Dynamic Innovation and Creativity; Globalization of Commerce; Ethics, Social Responsibility, and Cultural Sensitivity; and Integrative Systems Thinking and Practice.

These themes are continually reinforced in the core courses. They form the basis of lectures, readings, exercises and graded assignments, individual and group projects, cases, and discussions.

Degree Program

This 36-credit degree program leads to the degree of Master of Science in electronic commerce. It consists of nine core courses, including a capstone course, and three elective courses. The three elective courses can be selected from existing UMUC graduate courses.

Master's degree students at UMUC may seek approval to have up to 6 credits of transfer course work count toward the fulfillment of degree requirements. Up to 6 graduate transfer credits may be used to satisfy the core requirements, or up to 6 undergraduate transfer credits may be used to satisfy electives. All transfer credit must be approved by the Graduate School.

Agreement between UMUC and Capitol College

UMUC students enrolled in UMUC's Master of Science in electronic commerce degree program have the choice to transfer one of the following Capitol College courses to UMUC as an elective in the MSEC program: SM 586 Global Telecommunications Policies and Regulations or CM 612 Leadership, Motivation and Obtaining Results at Distance.

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Capitol College students enrolled in the Capitol College's Master of Science in electronic commerce management (MSECM) degree program have the choice to transfer one of the following UMUC courses to Capitol College as a Special Topics course in the ECM program: ECOM 610 Introduction to E-Commerce or ECOM 620 E-Marketing.

For more information on this arrangement, contact Robert Ouellette at 301-985-7824.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

A student may be admitted in one of four classifications: degree-seeking, provisional, certificate, or decision pending.

The decision-pending classification is temporary while students await final approval of admission. The admission requirements for each classification are explained below.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: A bachelor's degree from a regionally accredited university or college; an overall undergraduate GPA of at least 3.0 on a 4.0 scale, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 33) for information about the TOEFL and TWE examinations and evaluation of international education.

Provisional Status

Provisional status may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Classification

Decision-pending classification is short term and is meant for students who have not completed the admission process described previously. Students may enroll in one of the following graduate courses before UMUC has received the official college transcript from the bachelor's-degree-granting institution: ECOM 610, ECOM 620, or ECOM 640.

Students must receive an admission decision before subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

Locations

Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations.

Certificate Program

The Master of Science in e-commerce program has a certificate related to this discipline. See page 181 for more information.

Core Courses

ECOM 610 — 3 credits

Introduction to E-Commerce

Note: For a full description of this course, see page 90.

ECOM 620 3 credits

E-Marketing

Note: For a full description of this course, see page 67.

ECOM 630 3 credits

Information Risk Assessment and Security Management

Note: For a full description of this course, see page 72.

ECOM 640 3 credits

Internet Principles and Applications

Note: For a full description of this course, see page 73.

ECOM 650 3 credits

E-Commerce Applications and Operations

This course provides an understanding of EC applications and operations. The course covers technical topics such as the Internet, Intranet, Extranets, Portals, and search engines. Students learn the role of Enterprise Resource Planning (ERP) as the e-business backbone, supply- and selling-chain management tools, Customer Relationship Management (CRM), outsourcing, e-procurement, and electronic payment systems. In addition, the course covers the fundamental applications associated with electronic end-to-end business, including e-mail and other messaging technologies, electronic document management, workflow, data warehousing and data mining, knowledge management, and other decision support systems. Finally, the course covers management issues such as collaboration, strategic alliances, joint ventures and other methods to achieve strategic advantages and sustained operations.

ECOM 660 3 credits

E-Commerce Financial Management and Accounting

Note: For a full description of this course, see page 73.

ECOM 670 3 credits

Social, Legal, Ethical, and Regulatory Issues

Note: For a full description of this course, see page 73.

ECOM 680 3 credits

E-Commerce Application Software

This course examines application software for business-to-business and business-to-consumer e-commerce (EC). Initially studied are several fundamental EC application software tools including cgi-bin), search engines, and Web authoring tools (for example, HTML, HTTP, and XML). Also studied are transaction processing software tools including intelligent agents and protocols such as ANSI X12. Specific business-to-business transaction exchange methods reviewed include Electronic Data Interchange (EDI) and Electronic Funds Transfer (EFT).

ECOM 690 3 credits

E-Commerce Capstone

The capstone course integrates all the knowledge accumulated through the previous courses. The class focuses on best practices as demonstrated through case studies. Working in teams, students develop a comprehensive business plan or a market plan for a new Internet venture with a real company. This course also integrates crosscutting issues such as learning organization, the changing nature of work, entrepreneurship/intrapreneurship, technology trends, communication, creativity, and innovation.

Note: Students may enroll in this class only after completing at least 27 of the required 36 credits.

Master of Science in Environmental Management

The Master of Science in environmental management is designed to provide the skills, knowledge, and competencies that students will need to function effectively in multiple environmental management settings. The courses in the program are interrelated and provide a solid conceptual and applied foundation. An applicant is required to have at least 3 undergraduate credits each in basic biology and chemistry.

Degree Program

In each segment of the degree program, theory and concepts are presented so the student may develop and evaluate administrative skills. In each course, faculty members combine theoretical concepts with the practical application of usable skills. This 36-credit degree program consists of seven (3-credit) core courses, four (3-credit) elective courses, one (3-credit) management project, or, in lieu of the project, the two-course option.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

A student may be admitted in one of four classifications: degree-seeking, provisional, certificate, or decision pending. The decision-pending classification is temporary while students await final approval of admission. The admission requirements for each classification are explained below.

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Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited university in social science, physical science, biological science, or engineering; a minimum of 6 semester hours of coursework in chemistry and biology; a minimum of one year of experience or other evidence of expertise in the environmental field; an undergraduate GPA of 3.0 on a 4.0 scale; submission of the official transcript from the bachelor's-degree-granting institution; and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 33) for information about the TOEFL and TWE examinations and evaluation of international education.

Provisional Status

Provisional status may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their

ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits and remedy any other unmet admission requirements are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university in social science, physical science, biological science, or engineering; a minimum of 3 semester hours of coursework each in chemistry and biological sciences; a minimum of one year of experience or other evidence of expertise in the environmental field; an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study; submission of the official transcript from the bachelor's-degree-granting institution; and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Students who have not completed 6 semester hours of combined coursework in chemistry and biology may be admitted to provisional status while completing this requirement. They will be allowed to register for a maximum of three courses chosen from the following list while completing the requirement in chemistry and biology: ENGM 610, TMAN 640, ENVM 641, ENVM 643, or ENVM 646.

Decision-Pending Classification

Decision-pending classification is short term and is meant for students who have not completed the admission process described previously. Students may enroll in one of the following graduate courses before UMUC has received the official college transcript from the bachelor's-degree-granting institution: ENVM 646, ENVM 648, or TMAN 640. Students must receive an admission decision before subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

Certificate Program

The Master of Science in environmental management program has a certificate related to this discipline. See page 188 for more information.

Locations

Classes in the Master of Science in environmental management are offered at the College Park and Shady Grove Center sites. Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations.

Course Requirements

ENVM 648 Fundamentals of Environmental Systems is a required course for students lacking an undergraduate degree in science or engineering and one year of experience in the environmental field. ENVM 648 Fundamental of Environmental Systems (if required) and ENVM 646 Environmental/Energy Laws and Policy Development must be among the first four courses taken by new students admitted into the program.

Core Courses

TMAN 610 — 3 credits

Economics and Financial Analysis for Technology-Based Organizations

Note: For a full description of this course, see page 82.

TMAN 640 — 3 credits

Project Management

Note: For a full description of this course, see page 74.

ENVM 641 — 3 credits

Environmental Auditing

Methods for attaining statutory, regulatory, and permitting compliance are examined. The protection of workers and other stakeholders is also examined in the context of organizational, budgetary, and other constraints. Methods of defining auditing objectives to meet organizational goals and of designing auditing programs for effective compliance under each of the 12 major environmental statutes—

including air, water, solid and hazard waste management laws, and pollution prevention initiatives—are emphasized.

ENVM 643 3 credits

Environmental Communication and Reporting

The range of communication practices required for environmental managers in the fulfillment of legal, regulatory, ethical, and organizational responsibilities is examined. The various populations with whom environmental managers must communicate and interact are identified and examined, including plant supervisors, corporate executives, regulators, the legal community, civic groups, labor unions, and the media. The types of communication discussed range from decision memoranda to environmental impact statements, presentations of corporate environmental policies before affected communities, and development/conveyance of technical evidence for obtaining permit variances.

ENVM 646 3 credits

Environmental/Energy Laws and Policy Development

This course will examine U.S. environmental and energy law and policy, including its development, implementation, and enforcement. Legislative, executive, and judicial perspectives and the roles and impacts these institutions have made on environmental and energy law and policy are analyzed. Leading laws and their ensuing policies, such as the National Environmental Protection Act, the Clean Air and Clean Water Acts, the Resource Conservation and Recovery Act, the 1992 National Energy Policy Act, the FDR-era Federal Policy Act, the Public Utility Holding Company Act and the Carter-era Public Utility Regulatory Policy Act will be examined.

ENVM 647 3 credits

Environmental Risk Assessment

This course is designed to acquaint managers with the basic concepts of risk assessment. It examines the four core parts of a risk assessment as denoted by the National Academy of Sciences: hazard assessment, dose-response assessment, exposure assessment, and risk characterization. Methods of measurement and modeling are discussed, along with an exploration of key questions concerning uncertainty.

Differences in the risk characterizations of substances under different use conditions and legal requirements are studied. Significant case studies serve to illustrate the assessment process.

ENVM 670 3 credits

Seminar in Environmental Management

The capstone course for the environmental management program will require students to integrate knowledge gained in program courses for the solution of environmental management problems encountered in industrial, commercial, institutional, and military organizations. The course will focus on acceptable management guidelines, including ISO 14001, that provide a template for developing an effective environmental management system that can be integrated with other management requirements to help organizations achieve environmental and economic goals. The template can be used by different types and sizes of organizations and accommodate diverse geographical, cultural, and social conditions. The overall aim of an environmental management system is to support environmental protection and prevention of pollution in balance with socioeconomic needs. The course will present an in-depth review of management guidelines and will include a series of case studies illustrating their applicability to

different types of organizations. For the capstone project, students will be required to assess the efficiency and effectiveness of an environmental management system at an operating facility and develop recommendations for improvement.

Prerequisites: Completion of 27 semester hours of graduate coursework.

Electives

Students must choose four of the following courses for a total of 12 credits:

ENVM 644 3 credits

New Technologies in Environmental Management

An overview is offered of new waste management and waste minimization technologies, including treatment technologies such as thermal destruction and chemical treatment of hazardous wastes, bioreactors and bioremediation, and reverse osmosis and ultrafiltration. Disposal technologies are reviewed, such as landfill design and operation, incineration, and encapsulation methods. Pollution prevention technologies are also presented, including process redesign and computer-aided process control, as well as the substitution of toxic materials.

ENVM 645 3 credits

Hazardous Material Transportation

This course offers a review of the legal, regulatory, and operational requirements for the transport of hazardous materials and hazardous waste. A foundation is provided for understanding the state, federal, and international regulatory framework that governs the transport of such materials. The identification, classification, and description of transported materials (according to U.S. Department of Transportation criteria) is presented. The course includes the evaluation of shipment alternatives, such as the use of common carriers, contract carriage, and private carriage; compliance with shipping requirements, including the selection of appropriate packaging, labeling, and placarding; and the provision of emergency response support.

ENVM 648 3 credits

Fundamentals of Environmental Systems

The basic concepts of environmental chemistry, physics, geology, and risk are introduced. Environmental systems are presented in the study of the gaseous, liquid, and solid effluents from various industrial activities, while management methods and the statutory and regulatory requirements of major federal environmental laws affecting this management are considered. Additionally, this course provides the student with the basic vocabulary of the field and an understanding of fundamental principles relating to the transport and fate of contaminants and industrial wastes.

Note: This course is intended for students lacking a strong science background or experience in the environmental field.

ENVM 649 3 credits

Principles of Waste Management and Pollution Control

This course introduces the student to various methods of waste management including waste collection, transportation, recycling, treatment and disposal, and environmental monitoring. The course also focuses on hazardous and municipal solid waste, pollution prevention techniques, and waste minimization. An introduction to the process of disposal-facility site selection, design, and operation is also included.

ENVM 650 3 credits

Land and Water Resource Management

This course introduces the student to the development of multiple-use resource management strategies and the role of public policy in land and water resource management. Free markets, market failure, and distributional equity issues are examined. The Public Trust Doctrine, Native American Trust responsibilities, and land use regulations are also examined. Land and water restrictions, ex-post-liability schemes, and public purchase of private land and water rights are examined as approaches to land and water management.

ENVM 651 3 credits

Watershed Planning and Management

This course introduces students to the concepts of watershed management and the development of watershed-related management planning documents. The course examines the physical characteristics of watersheds and their role in maintaining healthy environments and providing a natural resource to society. The course also focuses on examining management techniques for the conservation and maintenance of watersheds.

ENVM 652 3 credits

Principles of Air Quality Management

This course presents management techniques for addressing air quality issues and managing air quality programs. The course focuses on air pollution law; air pollutants and their sources; effects of air pollution on health and welfare; sampling and analysis of air pollutants; standards, regulations, and enforcement systems; and quality assurance principles.

ENVM 653 3 credits

Air Pollution Sources and Controls

This course presents a broad overview of major air pollution sources and controls. The course examines the various contributing pollutants, sources and effects of pollutants, and dispersion and control of pollutants. Particulate and gas control systems are examined. Guides to the application of dispersion models are introduced. The course also highlights the legal and regulatory issues associated with implementing and maintaining air quality standards.

End-of-Program Option

Management Project

ENVM 690 and ENVM 690M 3 credits

Students must demonstrate their ability to structure and complete a major project that identifies and resolves an important management or organizational issue. Results of their efforts are reported in written and oral form. The project may be developed in cooperation with the student's current employer or with some other organization of the student's choice, provided there is no conflict of interest. The project is conducted under the direction of an on-site supervisor in cooperation with a faculty advisor.

Prerequisites: Completion of 30 semester hours of graduate coursework and ENVM 670.

Two-Course Option 6 credits

Instead of the management project, students may take two additional courses from the approved list—one interdisciplinary course (3 credits) and one elective (3 credits). The approved courses are:

Interdisciplinary/Breadth Courses (select one)

- ADMN 625 Organizational Communication
- ADMN 628 Contract Pricing and Negotiation
- IMAN 615 Foreign Investments and Strategic Alliances
- IMAN 661* Area Studies: Business Strategies for Europe
- TMAN 632 Organizational Performance Management
- TMAN 633 Human Resource Issues in Technology-Based Organizations

In selecting an interdisciplinary course, students should contact the appropriate program or track director to assure they are capable of performing the coursework.

**Includes a trip to Europe.*

Elective/Depth Courses

Students may choose any other elective in the ENVM program.

Environmental Business Concentration

The environmental management program, in lieu of four environmental electives, is offering the following cluster of four TMAN courses as electives for a concentration in environmental business:

- TMAN 613 Marketing Technology-Based Products and Services
- TMAN 614 Strategic Management of Technology and Innovation
- TMAN 632 Organizational Performance Management
- TMAN 633 Human Resources Issues in Technology-Based Organizations

For students who choose to take the cluster of business/management courses and do not possess an undergraduate degree in science or engineering and at least one year of environmental experience must register for ENVM 648 Fundamentals of Environmental Systems early on in their program. This choice will result in a program consisting of a minimum of 39 semester hours including a management project. Students choosing the two-course option would be required to complete 41 semester hours.

Energy Resources Management and Policy Track

The purpose of the energy resources management and policy track is to provide knowledge of the technologies, economics, management, and policy dimensions of energy systems.

The track has three major emphases: energy and resources, economics, and environment.

The energy resources management and policy track is designed to augment the following master's programs: environmental management, international management, management, technology management, and the dual technology management/MBA. The track courses will also be available as electives to other programs in the Graduate School. There are five courses in the track that supplement the program core courses.

Track Courses

ENER 601 3 credits

Energy Resources

Note: For a full description of this course, see page 68.

ENER 602 3 credits

Energy Economics

Note: For a full description of this course, see page 68.

ENER 603 3 credits

Energy Infrastructure Management

Note: For a full description of this course, see page 68.

ENER 604 3 credits

New Technologies in Energy Management

Note: For a full description of this course, see page 68.

ENER/ENVM 646 3 credits

Environmental/Energy Laws and Policy Development

Note: For a full description of this course, see page 68.

Master of Science in Health Care Administration

UMUC now offers a new 36-credit degree program in health care administration (HCA). This program offers a specialized and focused degree in health care administration. Applicants will be able to increase their depth of knowledge in the administration of health care services and programs through a variety of general management and health care administration courses. For updated information on the HCAD program, visit *www.umuc.edu/grad/hcad*.

Current students in the M.S. in management program in the health care administration track and in HCA certificate programs, who do not wish to earn the new M.S. in health care administration degree, may continue with their current programs, with no changes to the current course requirements.

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Degree Program

In each segment of this 36-credit degree program, theory and concepts are presented so the student may develop and evaluate management skills. In each course, faculty members combine theoretical concepts with the practical application of usable skills. This degree program consists of four (3-credit) core courses, seven (3-credit) required courses, and one (3-credit) elective course.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

A student may be admitted in one of four classifications: degree seeking, provisional, certificate, or decision pending. The decision-pending classification is temporary while students await final approval of admission. The admission requirements for each classification are explained in the following sections.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited university or college; an overall undergraduate GPA of at least 3.0 on a 4.0 scale, submission of the official transcript from the bachelor's-degree-granting institution,

and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 33) for information about the TOEFL and TWE examinations and evaluation of international education.

Provisional Status

Provisional status may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Classification

The decision-pending classification is short term and is meant for students who have not completed the admission process previously described. Students may enroll in one of the following graduate courses before UMUC has received the official transcript from the bachelor's-degree-granting institution: ADMN 625, ADMN 635, or HCAD 600. Students must receive an admission decision before subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

Certificate Program

The Master of Science in management program has 12 certificates, of which one is in health care administration. See page 181 for more information.

Locations

Classes in the M.S. program usually meet in the evening, once a week during the fall and the spring semesters and twice a week during the summer session. Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations throughout the Washington, D.C. metropolitan area and when courses will be available online.

Core Courses

ADMN 625 — 3 credits

Organizational Communication and Group Development

Note: For a full description of this course, see page 89.

ADMN 635 — 3 credits

Organizational Leadership and Decision Making

Note: For a full description of this course, see page 89.

ADMN 638 — 3 credits

Research Methods for Managers

Note: For a full description of this course, see page 89.

ADMN 630 — 3 credits

Financial Decision Making for Managers

Note: For a full description of this course, see page 63.

or

ADMN 631 — 3 credits

Financial Management in Organizations

Note: For a full description of this course, see page 63.

Required Courses

HCAD 600 3 credits

Introduction to Health Care Administration

This course will introduce the student to the understanding and application of principles of management as the foundations for the administration of health care products and service delivery. Tracing the evolution of management principles and practices, students will analyze the basis for health care administration. The management of global health care systems in technological societies and the need for innovation and creativity in health care administration will be emphasized. Course outcomes also will focus upon increasing the student's abilities to master graduate level critical thinking and writing skills, as well as enhancing their ethical responses to the challenges in the health care industry.

Students in the HCA track of the M.S. in management or in the HCA certificate programs should not take HCAD 600.

Note: HCAD 600 is a required first course for the M.S. in health care administration.

HCAD 610 3 credits

Information Technology for Health Care Administration

(formerly ADMN 669)

This course provides a management perspective of information technology (IT) and how health care administrators can use IT to maximize organizational performance. Fundamental principles of information technology and data management and their implications for health care administrators will be reviewed. The use of technology, databases and other analytical tools to structure, analyze and present information related to health care management and problem solving will be explored. Strategic information systems planning, systems analysis, system design, evaluation and selection will also be explored. Current applications, such as patient care, administrative and strategic decision support, managed health, health information networks and the Internet, will be examined to determine how they may be used to meet the challenges facing health care administrators today and in the future. The course will also focus on the legal and ethical issues related to IT and their practice implications for the health care administrator.

HCAD 620 3 credits

The U.S. Health Care System

(formerly ADMN 670)

This course represents a comprehensive examination of the complex, dynamic, rapidly changing health care system in the United States. The health care system's major components and their characteristics are identified, with an emphasis on current policy issues, performance challenges and program solutions. Social, economic, and political forces that have shaped and continue to influence the system are traced. Policy innovations designed to address performance gaps are analyzed for federal, state, and private sector programs. Potential lessons from international health care systems are explored as well as prospects for the future of U.S. health care.

HCAD 640 3 credits

Financial Management for Health Care Organizations

(formerly ADMN 672)

This course focuses on the financial management of health care organizations and stresses the basic economic models used in the United States. The course describes the American health care market and the attendant concepts of financial management of health services organizations within that market. The issues of free market and mixed market economies, regulation, licensure, certification, and other barriers to free market economies are examined, as are various insurance mechanisms. In addition, there is extensive discussion of the major financial issues of health care organizations, including reimbursement mechanisms, managed care, capitation, per-case or per-diagnosis payment, how these are packaged by third party-payors, and the effects reimbursement types have on health care provider organizations. The course also focuses on financial problems and how health care providers should respond to financial problems such as uncompensated care, cost increases, increased competition, and increased regulation. Issues of

working capital, capital budgeting and investment in relation to net present value and value added to the organization, health care organizations' ratio analysis, cost analysis, and other financial management techniques of primary importance to health care organizations are discussed.

Note: Students without a knowledge of finance are required to take ADMN 630 or ADMN 631 before enrolling in HCAD 640.

HCAD 650 3 credits

Legal Aspects of Health Care Administration

(formerly ADMN 673)

This course deals with the law and legal process as applied to the practice of health care administration. The principles of health care law, with an emphasis on contracts and torts, are discussed. Topics addressed include legal and regulatory constraints imposed on the health care industry, the liability of health care providers, the rights of patients, labor relations, and administrative law for health care organizations. A variety of pressing bioethical issues facing health care practitioners and administrators are examined.

HCAD 660 3 credits

Health Care Institutional Organization and Management

(formerly ADMN 674)

Health services organizations and systems that are effectively led and well managed, dominate their market, attract and hold good people, and consistently deliver cost effective care. This course emphasizes the nature of management and how it is applied in various health care settings. It examines critical perspectives, tools and techniques needed to successfully manage in the health care environment and addresses how managers actually manage the complex human and organizational relationships that exist both internally and externally in today's health care settings.

HCAD 690 3 credits

Capstone Course for Health Care Administration

This capstone course allows health care administration degree students the opportunity to integrate previous core and specialized health care administration graduate level courses in the development of a systems approach to health care administration. Focused on public and private health care delivery systems, the course will emphasize alliances with internal and external environments and strategic decision making and implementation in the rapidly evolving global arena of health care administration.

Prerequisite: Completion of all other program requirements.

Electives

Select one course:

HCAD 630 3 credits

Public Health Administration

(formerly ADMN 671)

This course is designed to acquaint students with the field of public health, emphasizing leadership and management. It is geared toward analyzing the current U.S. public health

system, focusing on federal, state, and local public health entities. Major topics covered include the history of public health; epidemiology; the condition, issues, and problems of the US public health system; core public health functions; and the politics and financing of public health. Field contact in a public health setting for the purpose of analyzing a public health program or policy may augment text and lecture presentations.

HCAD 670 3 credits

Long-Term Care Administration

(formerly ADMN 675)

Long-term-care administration encompasses all of those activities that relate to caring for and satisfying the essential needs of the aging population, including housing, health care, nutrition, education, and recreation. This course focuses on the management of skilled nursing, intermediate care, and long-term-care facilities; the management of day care, residential care, social HMOs, and community-based programs; and home health services. Textbooks and readings are supplemented by case studies in management of long-term-care services and facilities.

HCAD 680 3 credits

Special Health Care Administration Topics

(formerly ADMN 679)

This course is designed to provide students an opportunity to analyze, in depth, current and relevant topics impacting the rapidly evolving health care system. During this exploration of health care administration content areas, students will be expected to draw upon and incorporate previous general management and health care administration subject material. Specific topics to be further examined include ethics, managed care, intra- and entrepreneurship, health care marketing, the use of technology, psychosocial-behavioral issues as they relate to health care administration, and other industry-relevant topics as determined by the instructor.

Prerequisites: ADMN 630 or ADMN 631, and HCAD 650.

Master of Science in Information Technology

The Master of Science in information technology seeks to provide students with a technical curriculum covering a wide range of information technology (IT) topics. It is designed for those who are called upon to develop, implement, and operate information systems in a variety of organizations. Graduates of the Master of Science in information technology program will have a broad technical understanding of current and emerging technologies in the IT field, a familiarity with systems engineering concepts, and a solid foundation in the technological basis of the Internet. They will also have a firm grasp of current and future effects of the convergence of computer systems and telecommunications systems technologies.

(See also the Executive Master's Program in information technology. This program is offered in an accelerated seminar format with alternating online and Saturday on-site classes.)

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Degree Programs

This 36-credit degree program leads to a Master of Science in information technology. The curriculum is divided into 21 credits of core courses and 15 credits of electives. The core curriculum consists of seven technical courses in basic technology, computing, software, telecommunications, systems engineering, and the Internet, and a capstone course on information technology integration and applications. Students may fulfill the elective component of the curriculum in one of two ways, depending upon individual needs and work situations: they may select 15 credits of coursework from the entire range of existing UMUC information technology courses in order to gain an interdisciplinary perspective, or they may take a sequenced series of courses within one of the specialized sub-disciplines or course groups. Certain management electives are also available for students who may be on the management track in their organizations.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

A student may be admitted in one of four classifications: degree-seeking, provisional, certificate, or decision pending. The decision-pending classification is temporary while students await final approval of admission. The admission requirements for each classification are explained below.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited university in one of the engineering, physical science, or mathematical disciplines, as well as substantive practical experience in information technology (IT); an undergraduate GPA of 3.0 on a 4.0 scale; submission of the

official transcript from the bachelor's-degree-granting institution; and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 33) for information about the TOEFL and TWE examinations and evaluation of international education.

Provisional Status

Provisional status may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits and remedy any other unmet admission requirements are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university in physical science, mathematics, or engineering; a minimum of one year experience of expertise in the information technology field; an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study; submission of the official transcript from the bachelor's-degree-granting institution; and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Students admitted to provisional status will be allowed to register for a minimum of three courses.

Decision-Pending Classification

Decision-pending classification is short term and is meant for students who have not completed the admission process described previously. Students may enroll in one of the elective courses listed (so long as the prerequisites for the course have been met) before UMUC has received the official college transcript from the bachelor's-degree-granting institution. The UMUC Graduate School reserves the right to request additional transcripts.

Certificate Program

The Master of Science in information technology program has one certificate related to this discipline. See page 184 for more information.

Locations

Classes in the Master of Science in information technology are offered at the College Park and Shady Grove Center sites. Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations.

Core Courses

MSIT 610 3 credits

Foundations of Information Technology

This course lays a common foundation for use in all other courses in the program. Its goal is to impart an understanding of how the many elements that make up information technology work and what their limitations are. The course reviews mathematical and physical concepts helpful in thinking about the capabilities of information technology and its applications. Mathematical concepts include information theory, the representation of signals in both the time and frequency domains, modulation schemes, digitization, and probability. Physical concepts include electromagnetic waves, the properties of various guided and unguided transmission media, integrated circuits, lasers, and optical transmission and switching. The course also introduces concepts essential to information security applications, such as various encryption schemes and measures for assuring personnel and physical security. Insofar as possible, these concepts will be treated descriptively rather than analytically.

MSIT 620 3 credits

Computer Concepts

This course examines the major hardware and system software components and underlying technologies that are the basis of the modern digital computer. Major developments in the evolution of computers are reviewed first;

theoretical and engineering topics include Boolean logic, the Von Neumann architecture, and semiconductor device technology. The similarities and differences between mainframes, minicomputers, and microprocessors are then investigated. Supercomputer, parallel processor, and distributed system architectures are examined. Various types of storage media and input/output devices are discussed. An overview of system software elements, including operating systems and middleware, is also presented. The course concludes by introducing the student to advanced topics such as optical computers and biomolecular computers.

MSIT 630 3 credits

Concepts in Software-Intensive Systems

This course examines the technology, engineering practices, and business economics behind the wide variety of modern software-intensive systems. The foundations of software engineering are examined. Classes of application domains including real-time systems and transaction-based systems are analyzed. The practices used in developing small-scale and large-scale software systems are evaluated. Modern issues including design of the human-computer interface, software product liability, and certification of software engineers are discussed. The course concludes by investigating the structure, environment, and possible future of the software industry.

MSIT 640 3 credits

Data Communications and Networks

The course begins with a study of data communication fundamentals. These include digital and analog signals; modulation; circuit and packet switching; multiple access schemes such as Frequency Division Multiple Access (FDMA), Time Division Multiple Access (TDMA) and Code Division Multiple Access (CDMA); and telecommunication standards such as the Open System Interconnect (OSI) Model. The course then moves to telecommunications networks with a review of Local Area Networks (LANs) including topologies; contention access methods; and inter-networking devices such as bridges, routers and gateways. Also covered are Wide Area Networks (WANs) including the Public Switched Telephone Network (PSTN), wireless networks such as cellular, Personal Communication Systems, and wireless data; the Integrated Services Digital Network (ISDN); X.25; Frame Relay; and Asynchronous Transfer Mode (ATM). Finally, the course examines the network convergence issue; that is, one network for data, voice, images, and video.

MSIT 650 3 credits

Systems Engineering

Systems Engineering is an interdisciplinary approach to developing complex systems that satisfy a client mission in an operational environment. Information technology is at the heart of most systems. This course is an examination of the systems engineering process with special emphasis on computers and software systems. The course includes an overview of system theory and structures, elements of the systems life cycle (including systems design and development), risk and trade-off analyses, modeling and simulation, and the tools needed to analyze and support the systems process. Case studies from the information technology domain will be used to illustrate the systems engineering principles.

MSIT 660 3 credits

Internet Technologies

This course examines the technological base of the Internet. The first part of the course studies Internet technology including packet networking, Transport Control Protocol/ Internet Protocol (TCP/IP), and Internet security and authentication (for example, firewalls, encryption, virtual private networks), Internet 2 (a new research oriented Internet) and IPV.6 (advanced Internet protocol). The second part of the course addresses evolving use of multimedia transmission (such as voice over the Internet) and private and leased service IP networks. In addition, students will gain practical experience in developing and publishing a multimedia Web site.

ITSM 670 3 credits

Information Technology (capstone)

Note: For a full description of this course, see page 88.

Prerequisite: Completion of 27 semester hours.

Elective Courses

Students may select from the following courses to fulfill the elective requirement:

Special Topics

ITSM 637 3 credits

IT Acquisitions Management

Note: For a full description of this course, see page 78.

CSMN 639 3 credits

Multimedia and the Internet

Note: For a full description of this course, see page 88.

CSMN 655 3 credits

Information Security

Note: For a full description of this course, see page 77.

MSIT 699 3 credits

Advanced Topics in Information Technology

Note: For a full description of this course, see page 74.

Computer Systems Group

CSMN 616 3 credits

Distributed Computing

Note: For a full description of this course, see page 91.

CSMN 617 3 credits

Principles of Programming Languages

Note: For a full description of this course, see page 91.

CSMN 618 3 credits

Knowledge-Based Systems

Note: For a full description of this course, see page 91.

Database Systems Group

CSMN 661 3 credits

Relational Database Systems

(formerly CSMN 656)

Note: For a full description of this course, see page 78.

CSMN 662 3 credits

Advanced Relational/Object-Relational Database Systems

Note: For a full description of this course, see page 91.

CSMN 664 3 credits

Object-Oriented Database Systems

(formerly CSMN 657)

Note: For a full description of this course, see page 92.

CSMN 665 3 credits

Data Warehouse Technologies

Note: For a full description of this course, see page 92.

CSMN 666 3 credits

Data Systems Administration

Note: For a full description of this course, see page 92.

Electronic Commerce Group

ECOM 610 3 credits

Introduction to E-Commerce

Note: For a full description of this course, see page 90.

ECOM 620 3 credits

E-Marketing

Note: For a full description of this course, see page 67.

ECOM 670 3 credits

Social, Legal, Ethical, and Regulatory Issues

Note: For a full description of this course, see page 73.

The following undergraduate courses are also eligible for graduate credit as electives:

- IFSM 498D Data Mining
- IFSM 498N Disaster Recovery Planning
- IFSM 498S Issues in Computer Technology
- IFSM 498U Rapid Application Prototyping
- IFSM 498V Health Information Systems Management

Information Assurance Group

The new information assurance track provides a thorough knowledge base for managers and technology professionals concerned with the development and operation of secure information systems and with the protection of an organization's information assets. The track provides students with a practical understanding of the principles of data protection, network security, and computer forensics. The track also introduces the student to the policy, ethical, and legal issues associated with information security.

UMUC has been designated a National Center of Academic Excellence in Information Assurance Education by the National Security Agency.

CSMN 655 3 credits

Information Risk Assessment and Security Management

Note: For a full description of this course, see page 77.

CSMN 681 3 credits

Cryptology and Data Protection

Note: For a full description of this course, see page 92.

Prerequisite: CSMN 655.

CSMN 683 3 credits

Intrusion Detection, Incident Response, and Computer Forensics

Note: For a full description of this course, see page 93.

Prerequisite: TLMN 672.

CSMN 685 3 credits

Security Policy, Ethics, and the Legal Environment

Note: For a full description of this course, see page 93.

TLMN 672 3 credits

Network and Internet Security

Note: For a full description of this course, see page 93.

Prerequisite: CSMN 636, CSMN 655, or any TLMN specialization course.

Information Technology Management Group

TMAN 612 3 credits

Financial Management for Technology Managers

Note: For a full description of this course, see page 83.

TMAN 614 3 credits

Strategic Management of Technology and Innovation

Note: For a full description of this course, see page 79.

TMAN 633 3 credits

Human Resource Issues in Technology-Based Organizations

Note: For a full description of this course, see page 83.

TMAN 640 3 credits

Project Management

Note: For a full description of this course, see page 74.

Software Systems Group

MSWE 645 3 credits

Systems and Software Standards and Requirements

Note: For a full description of this course, see page 94.

MSWE 646 3 credits

Software Design and Implementation

Note: For a full description of this course, see page 94.

MSWE 647 3 credits

Software Verification and Validation

Note: For a full description of this course, see page 94.

MSWE 648 3 credits

Software Maintenance

Note: For a full description of this course, see page 94.

CSMN 658 3 credits

Software Reliability and Reusability

This course discusses principles of reliability, reusability, initiatives, and standards in software engineering, such as function point as a measure of complexity and, hence, reliability. The course provides an overview of software reliability models, software fault-tree analysis, types of software errors, types of design errors, and inherent characteristics of software that determine reliability. Software redundancy, automating tools for software reliability prototypes, and real-time software reliability are also covered.

Telecommunications Group

TLMN 620 3 credits

Local Area Networking Systems

This course examines the design, implementation, and management of computer networking systems. It examines the seven-layer Open Systems Interconnection (OSI) reference model. Networking methods for local area networking (LAN) such as Ethernet and Token Ring are studied along with enterprise network technologies such as Fiber Distributed Data Interface (FDDI). Also examined are local area networking devices such as repeaters, bridges, routers, hubs, and gateways. Traffic engineering techniques in networks are analyzed and evaluated. Various distributed computing architectures and emerging trends in the supporting technologies are central to course content. Topical discussions and case studies reinforce and synthesize new-found principles and provide the means for practical application of abstract concepts.

Prerequisites: Statistics and Calculus I, or equivalent.

TLMN 625 3 credits

Wide Area Network Systems

This course discusses transmission and switching for wide area networks (WAN) including circuit switched networks, such as the Public Switched Telephone Network (PSTN), and packet networks, such as the Internet. Other topics include Common-Channel Interoffice Signaling (CCIS), Signaling System 7 (SS7), frame relay, and asynchronous transfer mode (ATM). Wireless mobile systems are covered including cellular and satellite communication systems. Audio and video compression techniques are examined. Also studied are Private Branch Exchanges (PBX) including computer-telephone integration (CTI). A review is made of current trends including voice over Internet Protocol (IP).

Prerequisites: Statistics and Calculus I, or equivalent.

TLMN 641 3 credits

Network Management and Design

This course studies those techniques that network managers can utilize to maintain and improve the performance of a telecommunications network. A network management system is defined and explained, including a description of how software package programs can monitor real-time performance of a network to identify problems. The emphasis of the course is placed on the five tasks traditionally involved with network management (fault management, configuration management, performance management, security management, and accounting management). A review is made of examples of current specific network management products. Also covered is how the performance data gathered from the monitoring can be archived and used later as an input when decisions are made on changes in the network architecture. Additionally, network design is studied for the development of a new network architecture when only user requirements are known.

Note: Students who have already completed TLMN 640 may take TLMN 641 as a technological specialization course.

TLMN 645 3 credits

Wireless Telecommunications Systems

This course reviews wireless telecommunications systems from microcell to global infrastructures. Its purpose is to teach the technology, applications, and limitations of these systems, which have become an essential element of the world information infrastructure. Technology topics covered include cellular communication principles, coding, antenna and propagation effects, channel access schemes, traffic engineering, and wireless network design. The course places emphasis on terrestrial systems such as cellular, personal communication services (PCS), dispatch, wireless local-area networks (LANs), and wireless data systems. Also covered are the topic areas of market trends, regulations, and standards. Students assess the role of wireless systems in comparison with other telecommunications alternatives available to organizations.

Prerequisites: Statistics and Calculus I, or equivalent.

Special Topics

CSMN 614 3 credits

Data Structures and Algorithms

Note: For a full description of this course, see page 88.

ITSM 637 3 credits

Acquisition of Information Technology

Note: For a full description of this course, see page 78.

CSMN 639 3 credits

Multimedia and the Internet

Note: For a full description of this course, see page 88.

MSIT 699 3 credits

Special Topics in Information Technology

Note: For a description of this course, contact the department at 301-985-4616.

Master of Science in Management

This program is designed for professionals who, as they assume increasing responsibility within their organizations, find that the basis for success has shifted from technological expertise to the knowledge and skills necessary to manage human resources. Important topics covered in the required courses include methods and conduct of organizational assessments, the organization/environment relationship, strategic planning, organizational communication, budgeting and resource allocation, leadership, and organizational decision making. Throughout the curriculum, major emphasis is placed on the effects of rapid technological change on organizations and administrative processes and the consequent ethical and moral responsibilities of managers to society at large.

Note: Effective spring 2003, the curriculum for the MSM has changed to include a required foundation course (ADMN 600) for all students who matriculate spring 2003 or thereafter. MSM and MGA students who matriculate prior to spring 2003 should adhere to the program requirements set forth during the catalog year in which they began taking classes. Students should contact their academic advisor if they have questions. All students are responsible for determining and completing the appropriate degree requirements.

Degree Program

In each segment of this 36–39 credit degree program, theory and concepts are presented so the student may develop and evaluate management skills. In each course, faculty members combine theoretical concepts with the practical application of usable skills. Effective spring 2003, this degree program consists one foundation course (3-credits), six core courses (3-credits each), four tack courses (3-credits each), and one end-of-program option consisting of either of the following options: one management project (3–4) credits or the two-course option (6 credits).

Note: Students who matriculated prior to spring 2003 may choose to follow the former degree requirements: six 3-credit core courses, five 3-credit track courses, and one end-of-program option consisting of either of the following options: one management project (3–4) credits or the two-course option (6 credits).

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Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All MSM students who are not required to complete ADMN 600 must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

A student may be admitted in one of four classifications: degree seeking, provisional, certificate, or decision pending. The decision-pending classification is temporary while students await final approval of admission. The admission requirements for each classification are explained in the following sections.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited university or college; an overall undergraduate GPA of at least 3.0 on a 4.0 scale, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. Additional requirements for the accounting track are listed on page 121. The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 33) for information about the TOEFL and TWE examinations and evaluation of international education.

Provisional Status

Provisional status may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits, and meet all other degree requirements, are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Classification

The decision-pending classification is short term and is meant for students who have not completed the admission process previously described. Students may enroll in one of the following graduate courses before UMUC has received the official transcript from the bachelor's-degree-granting institution: ADMN 600, ADMN 601, ADMN 625, or ADMN 635. Students must receive an admission decision before subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

Certificate Program

The Master of Science in management program has 12 certificates related to this discipline. See page 181 for more information.

The following General Management certificates are being phased out: Foundations of Health Care Administration; Governance, Resource and Volunteer Management; and Principles and Practices of Health Care Administration. Students currently enrolled in these certificate programs should continue to enroll in courses as outlined by the certificate program when they first enrolled. Please refer to the current catalog for a list of these certificate requirements. No new applications will be accepted for the certificates listed.

Locations

Classes in the M.S. program usually meet in the evening, once a week during the fall and the spring semesters and twice a week during the summer session. Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations throughout the Washington, D.C. metropolitan area.

Foundation Course

ADMN 600 3 credits

Foundations of Management

This course is designed to provide students entering the MSM program with a common foundation in qualitative and quantitative analysis. This course prepares students in such areas as searching for information, critical thinking, basic research techniques and methodologies used in organizational research, and evaluation studies. Emphasis is placed on preparing the student to locate, evaluate, and use research-based information developed by other individuals. Among the three module topics are introduction to using library resources and services, including the library catalog, the Web, and UMUC's subscription databases, effective writing style, audience analysis, the treatment and integration of references from scholarly literature, principles of good data collection, representation of data in tables and charts, summary and description of numerical data, basic probability and discrete estimations, and the fundamentals of hypothesis testing.

Note: Students must take ADMN 600 within their first six credits of graduate study. Beginning in spring 2003, ADMN 600 is a required course for all new students, except for those in the accounting and public relations tracks. Students who matriculated prior to spring 2003 and who have not already taken an interdisciplinary/breadth course may choose to follow the new degree requirements by completing ADMN 600 in lieu of the former interdisciplinary/breadth requirement, or they may continue to follow the former degree requirements as outlined in the catalog year in which they matriculated. Students who must complete ADMN 600 do not need to take UCSP 610.

Core Courses

ADMN 601 3 credits

The Manager in a Technological Society

This course presents an overview of the fundamental concepts of organizational theory and design in the context of a post-industrial and increasingly global society. Integrated within the study of organizations are several key knowledge areas essential to today's manager: the impact of technological and workforce changes on society, organizational ethics and social responsibility, global issues, history of management thought and its relevance for managers today, and systems thinking and the challenges of managing in today's complex and rapidly changing environment. Course content addresses essential concepts in organizational theory and design, including measuring effectiveness, organizational life cycles, options for organizational structure, and becoming the learning organization. The course provides a knowledge base upon which other core courses build.

Note: ADMN 601 is a recommended first core course.

ADMN 625 3 credits

Organizational Communication and Group Development

Note: For a full description of this course, see page 89.

ADMN 630 3 credits

Financial Decision Making for Managers

Note: For a full description of this course, see page 63.

Note: Students are expected to know the materials covered in UCSP 620 Financial Accounting and UCSP 621 Economics, including the concepts of opportunity cost, the time value of money, financial accounting, and financial analysis. Students must take either ADMN 630 or ADMN 631, but may not take both courses. Financial management students must enroll in ADMN 631.

ADMN 631 3 credits

Financial Management in Organizations

Note: For a full description of this course, see page 63.

Note: See information under ADMN 630.

ADMN 635 3 credits

Organizational Leadership and Decision Making

Note: For a full description of this course, see page 89.

ADMN 638 3 credits

Research Methods for Managers

Note: For a full description of this course, see page 89.

Note: Students will be expected to know the materials covered in UCSP 630 Introduction to Research Methods including data collection techniques, presentation of data in tables and charts, basic descriptive statistics, basic probability distributions, normal distribution and sampling distributions, estimation, and hypothesis testing. Students in the public relations track must take PRPA 603 instead of ADMN 638.

ADMN 651 3 credits

Strategic Management (Capstone)

This is the capstone seminar, which investigates how strategy interacts with and guides an organization within its internal and external environments. Emphasis is on corporate and business unit level strategy, strategy development, strategy implementation, and the overall strategic management process. Key elements examined include organizational mission, vision, goal setting, environmental assessment, and strategic decision making. Techniques such as industry analysis, competitive analysis, and portfolio analysis are presented. Strategic implementation as it relates to organizational structure, policy, leadership, and evaluation issues is covered. The desired outcome is to improve the student's ability to "think strategically" and to weigh things from the perspective of the total enterprise operating in an increasingly global market environment. In addition to integrating prior core content areas through case analysis and text material, the course will give students familiarity with the problems and issues of strategy formulation through their participation in the Business Strategy Game simulation.

Prerequisites: Completion of 30 semester hours, including all core courses.

End-of-Program Option

All MSM students, except those in the accounting track and public relations track, must select one of the following end-of-program options.

Management Project

ADMN 690 3 credits

and ADMN 690M 1 credit

Students demonstrate their ability to structure and complete a major project that identifies and resolves an important management or organizational issue. Students report the results of their efforts in written and oral form. The project may be developed in cooperation with students' current employers or with some organization of their choice, provided there is no conflict of interest. The project is conducted under the direction of an on-site supervisor in cooperation with a faculty advisor. Students have two semesters within the 7-year time limit to complete the management project.

Prerequisites: Completion of ADMN 651.

Two-Course Option

Effective spring 2003, students who matriculate into the MSM program after spring 2003 and choose to complete the two-course option do not need to take an interdisciplinary/breadth course. Instead, these students should take two depth/elective courses designated by their respective track. Students who matriculate prior to spring 2003 and choose to complete the two-course option in lieu of the management project, must take one of the following interdisciplinary/breadth courses in addition to one depth/ elective course designated by their track: ECOM 670, IMAN 601, IMAN 625, IMAN 630 (not open to financial management track students), IMAN 635, IMAN 640, IMAN 645, IMAN 661 (requires 10-day trip to Europe), TMAN 632, TMAN 640.

Regardless of matriculation date, students in the MSM accounting and public relations tracks do not need to take an interdisciplinary/breadth course.

Specialty Tracks

Accounting (ACCT)

The accounting track is designed to satisfy the increased academic requirements to obtain and/or retain licensure in the accounting profession. The scope of the accounting track provides students with greater depth and breadth than accounting courses taken at the undergraduate level. Coursework will include solving problems and understanding and applying accounting principles as they relate to financial accounting and management accounting theory, the auditing process, accounting information systems, and federal income taxation. In addition, the capstone course in the track synthesizes material from the other track courses while providing a systematic review of basic components of the Certified Public Accountancy (CPA) examination. Mastery of courses in this track coupled with the management coursework for the Master of Science in management degree represent an applied graduate education for individuals who are part of the accounting profession.

Note: As a prerequisite, this program requires a minor in accounting or its equivalent (15 credits in undergraduate accounting with a "C" or better in each course).

Accounting students must complete ACCT 615 and five of the following courses: ACCT 609, ACCT 610, ACCT 611, ACCT 612, ACCT 613, and ACCT 614.

ACCT 615 is the only end-of-program requirement for the accounting track; therefore, accounting students do not need to complete the two-course option or the management project. Students in the accounting track will earn the MSM degree in 36 credits.

ACCT 609 3 credits

E-Commerce Accounting

Note: For a full description of this course, see page 70.

ACCT 610 3 credits

Financial Accounting

Note: For a full description of this course, see page 71.

ACCT 611 3 credits

Management Accounting

Note: For a full description of this course, see page 71.

ACCT 612 3 credits

Auditing Process

Note: For a full description of this course, see page 71.

ACCT 613 3 credits

Federal Income Taxation

Note: For a full description of this course, see page 71.

ACCT 614 3 credits

Accounting Information Systems

Note: For a full description of this course, see page 72.

ACCT 615 3 credits

Capstone Accounting Course

The components of the CPA examination are systematically reviewed as preparation for those who will take the exam. As preparation for work in the accounting field, earlier work is synthesized in the form of an end-of-track capstone project. Prerequisites include all core courses and five of the six remaining accounting track courses.

Prerequisite: Completion of five accounting track courses and all core courses except ADMN 651.

Energy Resources Management and Policy Track

The purpose of the energy resources management and policy track is to provide knowledge of the technologies, economics, management, and policy dimensions of energy systems.

UMUC graduates with a specialization in accounting may be able to complete the MSM with only 30 credits—if, as undergraduates, they completed certain courses recognized as equivalent by both the Graduate School and Undergraduate Programs at UMUC.

Only three undergraduate credits earned in these parallel courses may be applied to the graduate degree, and only three graduate credits may be applied to the undergraduate degree. Therefore, to be eligible to earn the MSM in 30 credits, UMUC undergraduates must have applied one of the parallel graduate courses to the undergraduate degree.

Undergraduate Programs will accept either ACCT 612 Auditing Process (in lieu of ACCT 427 Advanced Auditing Theory and Practice) or ACCT 614 Accounting Information Systems (in lieu of ACCT 326 Accounting Information Systems).

The Graduate School will accept either ACCT 426 Advanced Cost Accounting (in lieu of ADMN 630 Financial Decision Making for Managers) or ACCT 427 Advanced Auditing Theory and Practice (in lieu of ACCT 612 Auditing Process).

Note: Certification Requirements: Since educational requirements to sit for the Uniform CPA Examination differ among states, students planning to take the examination should determine the requirements by contacting the appropriate state board of accountancy. Students seeking information concerning the CPA examination in Maryland can contact their UMUC advisor or the Board of Accountancy for Maryland.

The track has three major emphases: energy and resources, economics, and environment.

All energy track students must take ENER 601, ENER 602, ENER 604, and ENVM 646. Energy resources management and policy track students selecting the two-course option must take ENER 603 and one elective from any track with the approval of the Program Director.

ENER 601 3 credits

Energy Resources

Note: For a full description of this course, see page 68.

ENER 602 3 credits

Energy Economics

Note: For a full description of this course, see page 68.

ENER 603 3 credits

Energy Infrastructure Management

Note: For a full description of this course, see page 68.

Students who select the two-course option must take ENER 603 and one elective which has been approved by the faculty advisor.

ENER 604 3 credits

New Technologies in Energy Management

Note: For a full description of this course, see page 68.

ENER/ENVM 646 3 credits

Environmental/Energy Laws and Policy Development

Note: For a full description of this course, see page 100.

Financial Management Track (FM)

The financial management track is intended for people seeking to exercise managerial responsibilities over the financial functions of their organizations, or for those general managers who wish to strengthen their knowledge of and skills in the financial management of their organizations.

Financial management track students who matriculate spring 2003 or thereafter must take ADMN 631 (core course), ADMN 632, ADMN 633, ADMN 634, and ADMN 655. Of these students, those who matriculate spring 2003 or thereafter and pursue the two-course option must take ADMN 636 and ADMN 639. Students admitted prior to Spring 2003 must take ADMN 631 (core course), ADMN 632, ADMN 633, ADMN 634, ADMN 639, and ADMN 655. Of these students, those who select the two-course option should take ADMN 636 as their depth/elective course and one approved interdisciplinary/breadth course. ADMN 631 is a prerequisite for all financial management track courses.

ADMN 632 3 credits

Financial Management of Current Operations

Note: For a full description of this course, see page 66.

ADMN 633 3 credits

Long-Term Financing of Organizations

Note: For a full description of this course, see page 66.

ADMN 634 3 credits

Financial Markets and Investments

Note: For a full description of this course, see page 66.

ADMN 636 3 credits

Cost Management

This course focuses on making decisions that improve organizational performance through better cost management. The need to improve cost efficiency is driven by increased global competition and investor emphasis on shareholder value. Cost management practices must be consistent with strategic goals and objectives. Cost efficiency can be achieved by analyzing and modeling managers' decisions on cost drivers. This course emphasizes a value-chain perspective, value-added analyses, activity-based management, and economic-value-added concepts in its approach to cost management. All topics are linked through an integrated perspective of cost management and through examination of the practices of "real-world" global organizations.

Note: Students must take ADMN 631 before enrolling in this course.

ADMN 639 3 credits

Multinational Financial Management

Note: For a full description of this course, see page 67.

ADMN 655 3 credits

Strategic Financial Management

This is an integrative course for the financial management track, heavily oriented toward readings, discussion, and case studies and/or simulations using analytical tools developed in the track courses. Current topics reflect the changing environment for and the role of financial management in organizations. Such topics include measuring and implementing economic value added (EVA™); performance-based reward systems; diversification, restructuring, and strategic partnering; business-process reengineering; corporate governance; value-based management; strategic cost management; and ethics in financial management. Within the context of one or more of the topics covered in the course, students are required to analyze and make recommendations concerning a financial problem or opportunity at their workplaces or other approved organizations.

Prerequisites: ADMN 631, 632, 633, and 634.

Note: This course is open only to students in the MSM (FM) track and students in the IMAN (FM) track.

Health Care Administration Track (HCA)

The health care administration track prepares students to assume administrative and managerial positions in health care organizations, including hospitals, nursing and long-term care facilities, managed care organizations (MCOs), and ambulatory care facilities. Though previous experience in health care is not a requirement, all entering students should be familiar with the fundamental values, practices, vocabulary, and basic concepts regarding health services organization and delivery if they are to be successful in this track.

All HCA track students who matriculate spring 2003 or after must take HCAD 620, HCAD 650, and HCAD 660, plus one additional HCAD elective (except HCAD 600 or HCAD 690). Of these students, those who select the two-course option must take two additional HCAD electives (except HCAD 600 or HCAD 690). HCA track students who matriculated prior to spring 2003 must take HCAD 620, HCAD 650 and HCAD 660, and two HCAD electives. Of these students, those who select the two-course option should take one HCAD elective (except HCAD 600 or HCAD 690) as their depth/elective course and one approved interdisciplinary/breadth course.

UMUC offers the M.S. in health care administration (HCA) degree, in addition to the HCA track of the MSM. The M.S. in HCA will provide students with greater depth of study in health care administration, services, and programs.

Current students in the MSM in health care administration track and in the HCA certificate program, who do not wish to earn the new M.S. in HCA degree, may continue in their current programs, with no changes to current course requirements.

HCAD 610 3 credits

Information Technology for Health Care Administration

(formerly ADMN 669)

Note: For a full description of this course, see page 106.

HCAD 620 3 credits

The U.S. Health Care System

(formerly ADMN 670)

Note: This is a required course for MSM HCA track students.

Note: For a full description of this course, see page 106.

HCAD 630 3 credits

Public Health Administration

(formerly ADMN 671)

Note: For a full description of this course, see page 107.

HCAD 640 3 credits

Financial Management for Health Care Organizations

(formerly ADMN 672)

Note: For a full description of this course, see page 106.

Prerequisite: ADMN 630 or ADMN 631.

HCAD 650 3 credits

Legal Aspects of Health Care Administration

(formerly ADMN 673)

Note: For a full description of this course, see page 107.

Note: This is a required course for MSM HCA track students.

HCAD 660 3 credits

Health Care Institutional Organization and Management

(formerly ADMN 674)

This is a required course for MSM HCA track students.

Note: For a full description of this course, see page 107.

HCAD 670 3 credits

Long-Term-Care Administration

(formerly ADMN 675)

Note: For a full description of this course, see page 108.

HCAD 680 3 credits

Special Topics in Health Care Administration

(formerly ADMN 679)

Note: For a full description of this course, see page 108.

Prerequisite: ADMN 630 or ADMN 631, and HCAD 650.

Human Resource Management Track (HRM)

The human resource management track is designed for managers who want to increase their understanding of the human resource management field. Individuals who intend to become human resource professionals, as well as other managers who plan to supervise staff and need to comprehend the issues, policies, and procedures involved in

effectively managing people, will find this program useful. The HRM courses provide the theory, research, knowledge, and procedures used by human resource executives and specialists. Contemporary issues in human resource management such as workforce diversity, employee-management relations, recruitment and selection, training and career development, compensation, organizational development and change, and the impact of globalization on organizations are examined.

HRM students who matriculate spring 2003 or thereafter must take ADMN 662 plus three other HRM courses. Of those students, HRM students who select the two-course option must select any two HRM electives not taken as a track elective to meet this requirement. HRM students who matriculated prior to spring 2003 must take ADMN 662 plus four HRM electives. Of these students, those who select the two-course option should take one HRM course as their depth/elective course and one approved interdisciplinary/breadth course.

Note: ADMN 662 is the recommended first MSM HRM track course.

ADMN 661 3 credits

Employee Relations

This course investigates the rights and responsibilities of employees and organizations in union and nonunion environments in the United States. It reviews the legal framework, primarily at the federal level, and discusses strategic fit of the ER program/services within the organization. It explores the current issues involved, such as equal employment opportunity, privacy, drug testing, wrongful discharge, health and safety, and pension and benefit plans. Public sector and global issues are included.

ADMN 662 3 credits

Issues and Practices in Human Resource Management

This introductory course provides an overview of the human resource management profession. It includes the theories, research, and issues related to human resource management within modern organizations. The roles, responsibilities, relationships, functions, and processes of human resource

management are discussed from a systems perspective. Expectations of various stakeholders such as government, employees, labor organizations, staff/line management, and executive management are explored. Particular attention is given to the general legal principles and provisions that govern human resource activities. The specialty areas of employee relations, staffing, human resource development, compensation, and organizational development are described. Current topics, such as human resource information systems and globalization, are included.

Note: It is strongly recommended that Human Resource Management students take this course before taking the other courses in the track. This course is required for Human Resource Management students.

ADMN 663 3 credits

Job Analysis, Assessment, and Compensation

This course is designed to familiarize the student with the interrelated aspects of human resource management. Topics include job design, job analysis, job evaluation, employee compensation, incentives to productivity, employee motivation, and performance appraisal. A variety of approaches for analyzing, weighing, and specifying the detailed elements of positions within modern organizations are presented. Techniques are discussed for identifying and classifying the critical components of a job, defining the observable standards and measures, preparing and determining the job

description and job worth, establishing equitable compensation for job performance, and developing an executive compensation program. Consideration is given to the interaction of compensation, worker motivation, performance appraisal, and level of worker performance within the organization.

ADMN 664 3 credits

Organizational Development and Change

Issues, theories, and methodologies associated with organizational development and the management of change are presented, with a major emphasis on organizational culture and organizational change processes. Areas of concentration include the diagnostic process, intervention strategies, and overcoming resistance to change. Techniques such as goal-setting, team-development procedures, productivity and strategy interventions, and interpersonal-change models are examined.

ADMN 665 3 credits

Current Perspectives in Training and Development

This course examines the theories, research, skills, and issues related to one major aspect of human resource development, the management of organizational training services. It discusses the role of training in the workplace and investigates adult learning models. It includes curriculum management, program development, and operation management with an emphasis on design and delivery issues. It considers the impact of technology, the global environment, and modern organizational structures. Ethical issues are discussed. Students develop training proposals or programs to demonstrate knowledge of the concepts.

ADMN 666 3 credits

Recruitment and Selection

This course examines the initial phases of staffing, focusing on the hiring process. It investigates the contemporary roles, relationships, and processes of recruitment and selection in the human resource management system. It highlights productivity factors (such as the use of technology) and quality factors (such as legal, ethical, and validity issues). It includes international as well as domestic concerns and consideration of multiple staffing levels (such as executive managers and temporary employees). Current issues in private, not-for-profit, and/or public sectors are discussed.

ADMN 667 3 credits

Managing Global Teams

This seminar investigates key HRM and Organizational Behavior concepts and issues in each stage of group development. It focuses on the impact of characteristics commonly found in global teams: diversity, virtual communication, and contingent job designs. Students examine published research and field literature to identify what knowledge exists and what still needs to be learned. They discuss the key questions in these unfolding areas and the implications of the findings for applied management.

Prerequisite: Completion of 30 credits, including ADMN 662, four additional HRM track courses, and all core courses except 651.

ADMN 668 3 credits

Human Resource Management Technologies

This course provides an overview of leading HR technologies and how they should be selected, implemented, managed, and evaluated. It is relevant for HR managers, senior-level HR professionals, HR strategists and consultants, and any HR professional interested in adapting HR processes and functions to modern technological applications. The course addresses such topics as best practices in HR technology deployment and management, and it encourages the alignment of HR technologies with corporate strategy. Leading HR technologies are covered, ranging from human resource information systems (HRIS) to "bolt on" applications and emerging technologies such as portals, kiosks, and wireless platforms. A wide variety of Web-based applications is examined, including online recruitment, online assessment systems, e-learning, knowledge management platforms, and various applications to facilitate virtual team development. It addresses funding needs for a technology-enabled human resources department, selecting vendors and consultants, and documenting a return on investment for HR technology acquisitions. Moreover, a series of self-development topics will be covered so that individuals will learn what it takes to transform from a traditional to a virtual HR professional.

Interdisciplinary Studies in Management (ISM)

This course track is intended for students who want a broad exposure to major areas of study that are essential for managers in every organization.

Interdisciplinary track students who matriculate spring 2003 or thereafter must take one designated course from each of the three clusters—International/Technology, Human Resources, and Legal Issues—plus one designated course from any of the other three clusters—Marketing, Management Information Systems, and Organizational Behavior.

Of these students, ISM students who choose the two-course option must take two additional interdisciplinary track courses, each from a cluster in which the student has not yet taken a course. Exceptions must be preapproved by the student's advisor.

Course selections are as follows:

- International/technology (IMAN 601, IMAN 661, TMAN 640, TMAN 632, or ENGM 615)
- Human resources (ADMN 662, ADMN 663, ADMN 664, ADMN 665, or ADMN 666)
- Legal issues (ADMN 637*, ADMN 661*, ADMN 627, or ADMN 660)
- Marketing (ADMN 658, ADMN 685, ADMN 686 or IMAN 640, ADMN 687, ADMN 688 or IMAN 620, ADMN 689, ECOM 620, or PRPA 601)
- Management information systems (ADMN 640, ADMN 641, ADMN 643, ADMN 644, or ADMN 645)

**Students who have taken ADMN 661 should not take ADMN 637 and vice versa.*

ADMN 637 3 credits

Legal Aspects of Management

Provides a study of legal consequences of major issues facing managers in dynamic organizations. The nature and structure of the traditional American legal system and current alternatives for resolving disputes are reviewed. Issues such as employment contracts and reference checks, job descriptions and evaluations, employee termination, discrimination, age and handicap regulations, and substance abuse testing in the workplace are considered. Additional topics of discussion include: union and no-union environments, contracts, torts and product liability, business/white collar crime, and ethics in the workplace. The course is intended to prepare managers with limited legal experience for dealing with these situations before they develop into workplace crises.

Management Information Systems Track (MIS)

The management information systems track provides five courses on the ways a manager can use computer-based information systems to enhance decision making and organizational effectiveness. This track is structured to accommodate the needs of students who have little or no experience with computers as well as those with advanced computer skills. In addition to receiving a technological foundation, students are exposed to the interaction of technology, organizational behavior, strategic planning, project management, and systems analysis to support the organization through its information systems.

MIS students who matriculate spring 2003 or thereafter are required to take ADMN 641, ADMN 643, ADMN 645, and either ADMN 640, ADMN 644, or any CSMN or TLMN course to complete the track requirements. Of these students, those who select the two-course option must take two courses from the following options: any CSMN or TLMN course or ADMN 644.

Students who matriculated prior to spring 2003 must take ADMN 641, ADMN 643, ADMN 644, ADMN 645 and ADMN 640 or any CSMN or TLMN course to complete the track requirements. Of these students, those who select the two-course option must take any CSMN or TLMN course and one interdisciplinary/breadth course from the approved list.

In selecting an MIS elective, students with little MIS background should take ADMN 640 as their MIS elective and those with some MIS background may take ADMN 644, or any CSMN or TLMN elective.

ADMN 640 3 credits

Information Systems for Managers

This course is designed for managers without a technical background in computers and information systems. Students review and evaluate different types of hardware and software, and their application in organizations from a systems perspective. Case studies are used to reveal technical and organizational issues, along with operational considerations. Students enrolled in the class are expected to have basic microcomputer skills. The theme of determining managers' needs for information, and procuring and using appropriate computer systems, is emphasized throughout the course.

ADMN 641 3 credits

Information Systems Management and Integration

Note: For a full description of this course, see page 77.

ADMN 643 3 credits

Systems Analysis and Design

Note: For a full description of this course, see page 77.

ADMN 644 3 credits

Decision Support and Expert Systems

This course is designed to provide the student with an understanding of computer applications for management support. In addition to the technologies of decision-support systems and expert systems, the organizational factors leading to the success or failure of such systems are introduced. Other topics addressed include group decision support systems, integration and implementation issues, and related advanced technologies such as neural networks.

ADMN 645 3 credits

Information Technology, the CIO, and Organizational Transformation

Note: For a full description of this course, see page 77.

Marketing Track (MKT)

The marketing track focuses on the theories and skills that managers can use to increase the demand for their organizations' products, services, or programs. This track applies to managers who must market products internally in their organizations, to those who market external products, and to marketers of free services as well as those of services with specific charges. Thus, this program applies to students in both the profit and not-for-profit sectors as well as to managers in a highly charged marketing culture.

Marketing track students who matriculate spring 2003 or thereafter must take ADMN 685, ADMN 686, and two electives from the following list of marketing track electives. Of these students, those who select the two-course option must take two additional marketing track electives from the following list of marketing electives. Marketing students who matriculated prior to spring 2003 must take ADMN 686 and ADMN 685 and three marketing electives. Of these students, those who select the two-course option should take one marketing elective as their depth/elective course and one approved interdisciplinary/breadth course.

ADMN 685 3 credits

Strategic Market Planning

This course presents the concepts and techniques for creating and selecting marketing strategies for an organizational unit that survives on its ability to provide products and services to other organizations. This course also discusses trends toward a "marketing culture" in both public and private institutions and the implications that this change has for all managers and administrators. This course concentrates on the role of brand equity in achieving a sustainable competitive advantage.

ADMN 686 3 credits

Marketing Management

This course presents theory and practices related to the management of the marketing function as they would be applied by managers and administrators in organizations

concerned with "business development." The course relates to the marketing of organizational products, programs, and services to either internal or external clients. Through analysis of case studies and spreadsheet exercises, the necessity of incorporating marketing functions with other business functions is demonstrated. The planning and implementation activities required to attain marketing goals for the organization are also emphasized. Topics addressed include the product/service mix, pricing, marketing communications such as advertising and sales promotion, and channels of distribution. The course also introduces control techniques for the overall marketing mix.

Note: ADMN 686 is the recommended first marketing track course.

ADMN 687 3 credits

Market Segmentation and Penetration

Note: For a full description of this course, see page 67.

ADMN 688 3 credits

Marketing Intelligence and Research Systems

Applications of cross cultural marketing research methods and techniques useful to managers and administrators with responsibility for assessing or increasing the demand for their organization's product, programs, and services are presented in this course. Methodologies and special topics related to the design and completion of marketing research projects are presented, including the survey, observational, and experimental methods used in assessing and segmenting markets. Special topics in data analysis that are especially useful for marketing research (that is, focus groups, customer visits, conjoint analysis, and multidimensional scaling) are covered.

Note: It is strongly recommended that students take ADMN 638 before enrolling in this course.

ADMN 689 3 credits

Integrated Direct Marketing

This course presents a systematic approach to integrated direct marketing. Integrated direct marketing is a process of precision deployment of multiple media and sales channels (for example, publicity and public relations, advertising, direct mail, telemarketing, and field sales channels) that seeks to maintain contact with the customer at multiple points during the sales cycle and throughout the long-term relationship with the customer. Integrated direct marketing is an information-driven marketing process, managed by database technology that enables the marketers to develop, test, implement, measure, and appropriately modify customized marketing programs and strategies. Specific measurement tools and topics to be examined include life-time value, performance measurement, cost per million (CPM), and cost per response.

Note: It is strongly recommended that students take ADMN 638 before enrolling in this course.

ECOM 620 3 credits

E-Marketing

Note: For a full description of this course, see page 67.

CSMN 639 3 credits

Multimedia and the Internet

Note: For a full description of this course, see page 88.

PRPA 601 3 credits

Public Relations Theory and Practice

This course relates the management function of policy formulation to the communication process of disseminating ideas and information to the organization's public. The impact of the Internet on public relations practices will be explored in depth.

Not-For-Profit Management Track (NFP)

The not-for-profit management track serves the needs of current and potential managers of organizations in the independent sector, including associations, development organizations, foundations, and political organizations. A thorough understanding of the sector is provided, with a special emphasis on revenue generation and cost control issues, legal constraints, recruitment and management of volunteers, and approaches to promotion, marketing, and fundraising. The management of contemporary concerns

such as organizational quality, diversity, and ethics is also examined in the context of the not-for-profit organization.

Not-for-profit students who matriculate spring 2003 or thereafter must take ADMN 654, ADMN 656, ADMN 657, and ADMN 659. Of these students, those who select the two-course option must take ADMN 658 and one elective which has been approved by the faculty advisor. NFP students who matriculated prior to spring 2003 should take ADMN 654, ADMN 656, ADMN 657, ADMN 658, and ADMN 659. Of these students, those who select the two-course option should take an approved interdisciplinary/breadth course and one elective that is preapproved by the faculty advisor.

ADMN 654 3 credits

Not-For-Profit Financial Management

Theories and practices of not-for-profit financial management and decision making, including budgeting, reporting requirements, nonprofit accounting, and financial standards are studied in detail. The role of financial management in maintaining the fiscal health and legal status of the not-for-profit organization is the primary focus. Emphasis is placed on budgeting, fund accounting, cash flow analysis, expenditure control, long-range financial planning, audits, and grant and contract management. Special attention is paid to compliance with not-for-profit accounting and financial management principles with reference to maintaining public access and ethical standards.

Note: ADMN 630 is a prerequisite for ADMN 654.

ADMN 656 3 credits

Not-For-Profit Organizations and Issues

A framework outlining the roles and functions of the principal types of not-for-profit organizations is presented. Major characteristics are introduced that distinguish not-for-profit organizations from their counterparts in the private and public sectors. The challenges, opportunities, and common issues facing managers of not-for-profit organizations are explored. These issues include administrative cost control, preserving the organization's legal status and revenue base, staffing and organizing in response to client needs, and ethical considerations. Specific laws, regulations, policies, and court rulings that affect the not-for-profit sector are examined.

Note: ADMN 656 is a strongly recommended as the first track course.

ADMN 657 3 credits

Not-for-Profit Law and Governance

Current ideas and approaches related to not-for-profit law, governance and mission are presented. Distinctions between nonprofit, educational, charitable, social action, membership, cultural, scientific, environmental, and trade associations as they relate to incorporation, legal standing, tax-exempt status, and governance are made. Integral to the course is a discussion of not-for-profit governance and trustee issues. Subsidiary issues such as lobbying and advocacy, nonprofit liability, personnel, and unrelated business income tax are analyzed. Special attention is paid to the relationship of governance and ethics in not-for-profit management.

ADMN 658 3 credits

Marketing, Development, and Public Relations in Not-for-Profit Organizations

Principles and practices required to develop and promote the products, services, positions, and image of not-for-profit organizations are considered. Fundraising and membership recruitment issues provide a central focus. Topics include the design of a marketing strategy and marketing mix, pricing issues, alternative revenue-generating mechanisms, and customer service. Use of the media, advertising and promotion methods, and relationships with business, government, and the community are explored.

The integration of sponsors, members, and chapters in the total marketing effort is examined.

ADMN 659 3 credits

Strategic Management in Not-for-Profit Organizations

The integration and application of strategic management principles, concepts, and practices in not-for-profit organizations are discussed. The development of mission statements, goal-setting concepts, and strategy formulation and

implementation approaches are included. Students are provided the opportunity to design organizational plans and strategies relevant to their specific needs and the needs of their organizations.

Note: ADMN 659 is strongly recommended as the last track course.

Procurement and Contract Management Track (PCM)

The procurement and contract management track is designed for individuals who are involved in contract administration or procurement activities in the private, public, and not-for-profit sectors. The courses in this track provide a foundation for understanding both the strategic and operational aspects of the procurement function. Both general and specialized management studies are integrated with the required courses.

Procurement and contract management students who matriculate spring 2003 or thereafter must take ADMN 626, ADMN 627, ADMN 628, and ADMN 629. Of these students, those who select the two-course option must take ADMN 660 and either ADMN 622 or ADMN 623. PCM students who matriculated prior to spring 2003 must take ADMN 626, ADMN 627, ADMN 628, ADMN 629, ADMN 660. Of these students, those who select the two-course option must take ADMN 622 or ADMN 623 as their depth/elective course and one approved interdisciplinary/breadth course.

ADMN 622 3 credits

Integrative Supply Chain Management

Note: For a full description of this course, see page 78.

ADMN 623 3 credits

Contemporary Logistics

This course covers logistical issues, techniques, methodologies, and strategies designed to enhance organizational efficiency. The course specifically examines the total cost approach to logistics; logistical planning and implementation; logistical concepts; systems relationships and integration; demand forecasting; interplant movement; inventory management and control; order management and processing; packaging; plant and warehouse selection; production scheduling; traffic and transportation management; warehouse and distribution management; recycling; and other logistical strategies, techniques, and methodologies.

ADMN 626 3 credits

Purchasing and Materials Management

An overview of the procurement and contracting cycle is provided with other organizational functions. Methods of purchasing and source selection are covered, with a focus on receipt, inspection, and quality assurance. Documentation and reporting specifics are examined, as are surplus, salvage, and disposal issues. Inventory, physical distribution, and logistics are considered.

Note: ADMN 626 is a recommended first course for the PCM track.

ADMN 627 3 credits

Legal Aspects of Contracting

The law of commercial purchasing is presented, including the law of agency, contracts, sales, torts, and antitrust. In addition, the Federal Acquisition Regulation and American Bar Association model procurement codes for state and local governments are examined. Topics addressed include the authority of purchasing, unauthorized purchases, rights and duties of sellers and buyers under a contract, buyer rights upon receipt of nonconforming goods, ability to terminate a sales contract, formation of government contracts, and formal dispute resolution.

ADMN 628 3 credits

Contract Pricing and Negotiation

Techniques for planning, conducting, and managing negotiated procurements are presented. A primary focus is on analytical techniques for conducting price and cost analysis in preparation for negotiations. Techniques for

critically examining all categories of costs, including profit, are examined. The theory and practice of negotiations are studied, and students are given the opportunity to practice negotiation techniques to achieve a fair and reasonable contract price. Students gain practice in preparing negotiation positions through analysis of cases containing detailed cost and pricing data. Ethical decision making throughout these processes is addressed.

ADMN 629 3 credits

Strategic Purchasing and Logistics

This course presents issues and methodologies related to strategic purchasing and logistics. The ethics, social responsibility, and accountability considerations in procurement, logistics, and contract management are among the major topics considered in this course. In addition, specific areas of study such as the professional development of staff, just-in-time management, electronic data interchange, vendor assessment and development, pricing and negotiation, and international procurement issues are presented.

ADMN 660 3 credits

Commercial Transactions in a Technological Environment: Law, Management, and Technology Transfer

Students are presented with legal issues and management methodologies related to commercial transactions in a technological environment. The law, ethics, accountability, and contract management considerations in the procurement of technology products and services are among the major topics considered in this course. In addition, specific areas of study such as commercial sales transactions, government commercial item acquisition, private and government contracts for services, assignment and protection of proprietary rights in technology products, technology transfers, and international contractual issues in the procurement of products and services are presented.

Note: It is recommended that students complete ADMN 627 before enrolling in ADMN 660.

Public Relations Track (PRPA)

The public relations track is designed to meet the needs of both the entry-level employee and the working professional who seeks a more formal grounding in the public relations profession. The scope of the public relations track provides students with a solid grounding in public relations theory, legal and ethical issues confronted by practitioners and the analytic and creative skills necessary to excel in the profession. Each of the courses addresses the impact of the explosion of Internet-enabled, networked communications that is forcing change in the manner in which corporations communicate with their varied publics. The capstone experience provides the student with an opportunity to observe and participate in the production and assessment of a public relations campaign, providing the student with the opportunity to analyze the effects of various strategies and practices in the workplace.

The following six courses are required for the track: PRPA 601, PRPA 602, PRPA 603, PRPA 604, PRPA 610, and PRPA 690. In addition, students must choose either CSMN 639 or ECOM 620 as one of the Tools courses.

Notes: Students in the public relations track must take PRPA 603 instead of ADMN 638 Research Methods for Managers.

PRPA 690 is the only end-of-program requirement for public relations (PR) students and students do not need to complete the two-course option or the management project. Students in the PR track will earn the MSM in 36 credits.

PRPA 601 3 credits

Public Relations Theory and Practice

Note: For a full description of this course, see page 128.

PRPA 602 3 credits

Media Communications Techniques

Presents advanced writing techniques designed to teach/coach students in the writing of specialized public relations materials, with emphasis on audience, message, and channel identification.

PRPA 603 3 credits

Public Relations Research

This course examines the nature, formation, and communication of attitudes and public opinion in public relations settings. The application of research methods for measurement of attitudes, opinions, and performance measurement of public relations campaigns is presented. Topics such as sampling, interviewing, and data analysis techniques are covered.

PRPA 604 3 credits

Public Relations Law and Ethics

This course surveys communications law emphasizing its applications to advertising and public relations. Topics include First Amendment issues, libel, privacy confidentiality, and access to information. Ethical issues surrounding the practice of public relations in a wired world will be explored.

PRPA 610 3 credits

Crisis Management Seminar

This seminar examines current approaches to defining crises, issue management, and crisis management through a mix of discussion, lecture, and presentation. Students will explore traditional and Web-based approaches to the study of issue management and crisis management by applying research, theory, and case examples to these situations with a goal of developing better issue identification, public segmentation, and strategic response sets to crisis situations.

PRPA 690 3 credits

Practicum/Internship

Students engage in an on-site work experience to acclimate them to the realities of organizational requirements, to explore a specific type of public relations in depth, and to apply theory to the solution of everyday communications problems.

Prerequisite: All required MSM core courses (except ADMN 638), all other PR track courses and one tools course.

Master of Science in Technology Management

Technology management is vitally important for both private and public sector organizations, which must manage the fast pace of technological change. Now all businesses and public organizations are managed with and through technology, and understanding the technological bases of management activities is essential for modern management skills. For example, information technology is used in planning and controlling operations and in marketing. Product and production technologies are used in designing and producing products. Service technologies are used in delivering services. Technologies pervade the whole organizational structure and all operations. A Master of Science in technology management provides: (1) a broad-based core of management competency in the central business functions, along with (2) a deep understanding of generic technologies that enable specific business capabilities. Seven core courses focus upon a common management competency, while six elective courses allow a student to customize depth in technology toward the student's long-term career goals. Technical depth can be provided wholly or partly in several technical areas: biotechnology, environment, e-commerce, systems, information technology, and administration.

(See also the Executive Master's Program in technology management. This program is offered in an accelerated course format with alternating face-to-face and online classes.)

Degree Program

The 36–39 credit TMAN degree is a generalist degree, providing a broad coverage of all business functions, such as production, marketing, finance, personnel, and so forth. As a generalist degree, the TMAN is unique, in emphasizing the technology tools of these functional areas and the integration of the enterprise through technological tools. This degree provides a broad intellectual base upon which a modern manager can continue to build competencies over the long-term of a career and through the continuing rapid progress in technologies relevant to business and public organizations. Students have the option of taking the basic program in technology management or specializing in technology systems management.

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The degree program consists of two segments: seven required core courses and six electives.

Note: Students enrolled in the TMAN program prior to spring 2001, with a specialty in biotechnology management, may complete their specialty. Those interested in biotechnology may consider the M.S. in biotechnology studies.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

A student may be admitted in one of four classifications: degree seeking, provisional, certificate, or decision pending. The decision-pending classification is temporary while students await final approval of admission.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited university; an undergraduate GPA of 3.0 on a 4.0 scale; submission of the official transcript from the bachelor's-degree-granting institution; and a personal statement.

The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 33) for information about the TOEFL and TWE examinations and evaluation of international education.

Provisional Status

Provisional status may be granted to students who fall slightly below the criteria for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits are moved automatically to degree status. No courses may be repeated while the student is in provisional status. The minimum admission requirements for provisional status are: a bachelor's degree from a regionally accredited university; an undergraduate grade-point average of at least 2.5 on a 4.0 scale in the student's major area of study; submission of the official transcript from the bachelor's-degree-granting institution; and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Classification

Decision-pending classification is short term and is meant for students who have not completed the admission process as described above. Students may enroll in one of the following graduate courses before UMUC has received the official college transcript from the bachelor's-degree-granting institution: TMAN 611, TMAN 612, TMAN 613, or TMAN 633. Students must receive an admission decision before subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

Certificate Program

The Master of Science in technology management program has two certificates related to this discipline. See page 188 for more information.

Locations

Classes in the M.S. in technology management program are currently offered at College Park, the University System of Maryland Shady Grove Center in Rockville, and Annapolis. Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations.

Core Courses

TMAN core courses differ for students pursuing the dual TMAN/MBA degree (see page 161 for TMAN/MBA dual degree requirements).

Basic Program

TMAN 611 — 3 credits

Principles of Technology Management

Note: For a full description of this course, see page 83.

TMAN 612 — 3 credits

Financial Management for Technology Managers

Note: For a full description of this course, see page 83.

TMAN 613 — 3 credits

Marketing Technology-Based Products and Services

Note: For a full description of this course, see page 83.

TMAN 632 3 credits

Organizational Performance Management

Note: For a full description of this course, see page 74.

TMAN 633 3 credits

Human Resource Issues in Technology-Based Organizations

Note: For a full description of this course, see page 83.

TMAN 640 3 credits

Project Management

Note: For a full description of this course, see page 74.

TMAN 671 3 credits

Seminar in Technology and Innovation Management

This is the capstone course for the technology management program. The objective is to provide students with an integrative exercise that draws upon the fundamental materials and skills developed in the core courses. Students work in teams to develop a comprehensive business plan for a new venture, (that is, a new product or service). The start-up concept is developed through the stages of initial screening, market assessment, business analysis (preliminary and final plan), product development, testing, production, and market launch. The techniques of market research and planning, competitive analysis, return on investment, financing and budgeting, marketing, staffing and organizational design, quality management, and project planning are emphasized in the development of the new venture.

Prerequisites: Completion of 27 semester hours of graduate coursework.

Note: This course replaces TMAN 670.

TMAN Core Courses differ for students pursuing TMAN/MBA dual degree (see dual degree regulations).

Electives (6)

TMAN 610 3 credits

Economics and Financial Analysis for Technology-Based Organizations

Note: For a full description of this course, see page 82.

TMAN 614 3 credits

Strategic Management of Technology and Innovation

Note: For a full description of this course, see page 79.

Note: Students are advised to complete TMAN 612 and TMAN 613 before taking this course.

TMAN 621 3 credits

Systems Analysis and Operations Research

This course introduces students to the fundamentals of systems analysis and operations research. The purpose is to provide an understanding of the systems view of a product, service, or process to include a generic representation of its elements and dynamics. The skills, tools, and methodologies needed to quantitatively analyze and optimize systems and to make decisions as technology managers are provided. State-of-the art analytical tools and quantitative methods, including computer-based solutions, are discussed. Topics covered include decision theory, linear programming, transportation problems, network analysis, game theory, reliability theory, cost estimating, and expert systems.

TMAN 622 3 credits

Systems Development, Acquisition, and Management

The concepts, processes, and techniques that are used in the management of programs (governmental or commercial) to develop, acquire, and implement complex systems are introduced. The course examines the life cycle phases of managing a complex system, from conception and preliminary design to detail design and development, production, acquisition, implementation, operation, and maintenance. Emphasis is placed on understanding the key skills and approach to managing the total life cycle of a technically based systems program.

An overview is provided of the legal issues and constraints of the organizational environment influencing the acquisition and implementation of systems. The focus is on the formulation of a strategy that integrates factors such as system requirements, competition, rights-to-data, make-or-buy decisions, source selection, standardization, and warranties/guarantees. Objectives and key activities are provided for each milestone during the development of a program.

TMAN 623 3 credits

Systems Analysis and Design

Students are introduced to the principles and techniques of systems analysis and design methods with particular emphasis on information systems. The conceptual architecture of an information system, information systems framework, and conceptual building blocks are introduced. The concept and techniques of information systems models, such as data model, process model, and network model are discussed in depth. An appreciation of multidisciplinary approach needed for systems analysis and management will be gained through an understanding of information systems project management techniques, tools, and skills required for a successful completion of an information systems analysis and design project.

TMAN 636 3 credits

Knowledge Management

Note: For a full description of this course, see page 84.

TMAN 661 3 credits

Systems Development and Management

Note: For a full description of this course, see page 84.

Note: This course replaces TMAN 631 Operations Management.

BIOT 640 3 credits

Societal Issues in Biotechnology

Note: For a full description of this course, see page 81.

BIOT 643 3 credits

The Techniques of Biotechnology

Note: For a full description of this course, see page 81.

BIOT 646 3 credits

Bioinformatics

Note: For a full description of this course, see page 82.

ENVM 644 3 credits

New Technologies in Environmental Management

Note: For a full description of this course, see page 101.

ENVM 649 3 credits

Principles of Waste Management and Pollution Control

Note: For a full description of this course, see page 101.

ENVM 650 3 credits

Land and Water Resource Management

Note: For a full description of this course, see page 101.

ECOM 610 3 credits

Introduction to E-Commerce

Note: For a full description of this course, see page 90.

ECOM 620 3 credits

E-Marketing

Note: For a full description of this course, see page 67.

ECOM 630 3 credits

Information Risk Assessment and Security Management

Note: For a full description of this course, see page 72.

ECOM 640 3 credits

Internet Principles and Applications

Note: For a full description of this course, see page 73.

ECOM 650 3 credits

E-Commerce Applications and Operations

Note: For a full description of this course, see page 97.

CSMN 615 3 credits

Hardware and Operating Systems

Note: For a full description of this course, see page 91.

CSMN 636 3 credits

Telecommunications and Connectivity

Note: For a full description of this course, see page 77.

CSMN 661 3 credits

(formerly CSMN 656)

Relational Database Systems

Note: For a full description of this course, see page 78.

TLMN 645 3 credits

Wireless Telecommunications Systems

Note: For a full description of this course, see page 115.

Prerequisites: Statistics and Calculus I, or equivalent.

ADMN 622 3 credits

Integrative Supply Chain Management

Note: For a full description of this course, see page 78.

ADMN 628 3 credits

Contract Pricing and Negotiation

Note: For a full description of this course, see page 131.

ADMN 644 3 credits

Expert Systems and Decision Support Systems

Note: For a full description of this course, see page 127.

ADMN 660 3 credits

Commercial Transactions in a Technological Environment: Law, Management, and Technology Transfer

Note: For a full description of this course, see page 131.

Energy Resources Management and Policy Track

The purpose of the energy resources management and policy track is to provide knowledge of the technologies, economics, management, and policy dimensions of energy systems. The track has three major emphases: energy and resources, economics, and environment.

The energy resources management and policy track is designed to augment the following master's programs: environmental management, international management, management, technology management, and the dual technology management/MBA. The track courses will also be available as electives to other programs in the Graduate School. There are five courses in the track that supplement the program core courses.

Track Courses (5)

ENER 601 3 credits

Energy Resources

Note: For a full description of this course, see page 68.

ENER 602 3 credits

Energy Economics

Note: For a full description of this course, see page 68.

ENER 603 3 credits

Energy Infrastructure Management

Note: For a full description of this course, see page 68.

ENER 604 3 credits

New Technologies in Energy Management

Note: For a full description of this course, see page 68.

ENER 646 3 credits

Environmental/Energy Laws and Policy Development

Note: For a full description of this course, see page 68.

Note: Same course as ENVM 646, but those pursuing the energy resource track must take ENER 646, unless taken before fall 2002.

Technology Systems Management Track

The technology systems management track is intended for students interested in managing systems acquisition and development in technical enterprises. The courses include methods and applications for creatively designing, developing, integrating, and producing a final product; the tools and skills of project management; and systems acquisition approaches and methodologies in both the public and private sectors. Provision is made for depth in information technology systems.

Core Courses (15 credits)

Students must take the following courses: TMAN 611, TMAN 612, TMAN 613, TMAN 614, and TMAN 671.

Track Courses (12 credits)

Students must take the following courses:

TMAN 621 3 credits

Systems Analysis and Operations Research

Note: For a full description of this course, see page 135.

TMAN 622 3 credits

Systems Development, Acquisition, and Management

Note: For a full description of this course, see page 135.

TMAN 623 3 credits

Systems Analysis and Design

Note: For a full description of this course, see page 136.

TMAN 640 3 credits

Project Management

Note: For a full description of this course, see page 74.

Electives/Depth Courses

Students must choose two of the following elective courses: CSMN 615, CSMN 636, CSMN 639, CSMN 655, TMAN 610, TMAN 661, TLMN 610, TLMN 620, and TLMN 645.

Note: For a full description of these courses, see pages 77, 82, 84, 88, 91, 114, 115, and 141.

End-of-Program Option

One TMAN course (either TMAN 632 or TMAN 633) and one course from the following: ADMN 627, ADMN 628, ADMN 661, ADMN 663, or IMAN 615.

Note: For a full description of these courses, see pages 63, 74, 83, 124, 130, and 131.

Master of Science in Telecommunications Management

The Master of Science in telecommunications management is designed to provide the technical knowledge and management skills needed to plan, acquire, operate, and evaluate telecommunication systems. The program emphasizes critical management concepts, such as the structure and environment of the telecommunications industry, strategic planning, financial management, and quality improvement. In addition, the program offers instruction specific to telecommunications in the following areas: data-communication systems, local- and wide-area networking systems, satellite systems, wireless telecommunication systems, network management, the Internet, the complex process of hardware and software acquisition from the standpoint of both the purchaser and the vendor, and the application of these topics to practical issues of telecommunications systems integration and management.

(See also the Executive Master's Program in information technology. This program is offered in an accelerated course format with Saturday classes.)

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Degree Program

This 36–39 credit degree program consists of five (3-credit) core courses, three (3-credit) technical specialization courses, three (3-credit) required systems courses, and one (3-credit) management project or, in lieu of the project, the two-course option.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

National Defense University

Students who have completed the Advanced Management Program or the Chief Information Officer Certificate Program at the National Defense University Information Resources Management College (IRMC) may transfer 15 credits in partial satisfaction of the Master of Science in telecommunications management degree (subject to Graduate School time limits of seven consecutive years) to replace TLMN 602, TMAN 612, TMAN 614, TMAN 632, and one elective course. Students must apply and meet the established admission criteria for the program. Interested students should call either an IRMC advisor or contact the academic department.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

A student may be admitted in one of four classifications: degree, provisional, certificate, or decision pending. The decision-pending classification is temporary while students await final approval of admission. Certificate status exists for students pursuing the Graduate School credit certificate. Admission requirements for each classification are explained below.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree, preferably in a technical field, from a regionally accredited university or college; an overall undergraduate GPA of at least 3.0 on a 4.0 scale; at least one undergraduate course in statistics and one semester of calculus (that is, Calculus I) completed with a minimum grade of "C" in each course or equivalent proficiency as determined by the program director.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 33) for information about the TOEFL and TWE examinations and evaluation of international education.

Provisional Status

Provisional status may be granted to students who fall slightly below the criteria for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits and remedy any other unmet admission requirements are moved automatically to degree status. No courses may be repeated while in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Classification

The decision-pending classification is short term and is meant for students who have not completed the admission process described above. Students are encouraged to register for one of the following graduate courses before UMUC has received the official transcript from the bachelor's-degree-granting institution: TLMN 602, TMAN 612, or TMAN 632. Students must receive an admission decision prior to subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

Certificate Program

The Master of Science in telecommunications management program has one certificate related to this discipline. See page 187 for more information.

Locations

Courses in the M.S. in telecommunications management program are currently offered at College Park and the University System of Maryland Shady Grove Center in Rockville, MD, and online. Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations.

Required Core Courses

TLMN 602 — 3 credits

Telecommunications Industry: Structure and Environment

Major technological, legal, and regulatory developments (national and international) are studied as they have molded the structure of the current telecommunications industry. The course traces the progression of early legislation, the regulated monopoly, antitrust, divestiture, and recent legislation that has led to the current industry environment of competition and incipient integration of different industry segments. The roles of various national and international institutions in shaping the telecommunications industry are discussed.

TMAN 614 — 3 credits

Strategic Management of Technology and Innovation

Note: For a full description of this course, see page 79.

TMAN 612 — 3 credits

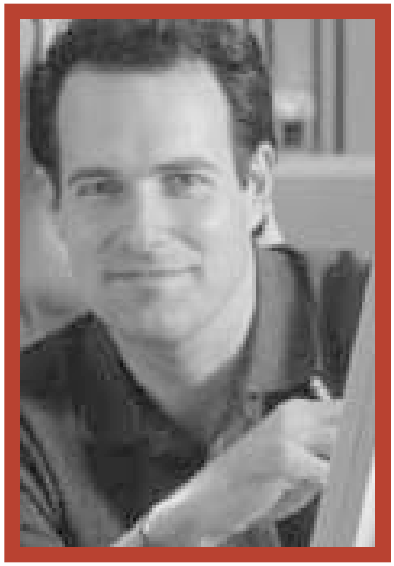
Financial Management for Technology Managers

Note: For a full description of this course, see page 83.

TMAN 632 — 3 credits

Organizational Performance Management

Note: For a full description of this course, see page 74.



ITSM 670 3 credits

Information Technology (Capstone)

Note: For a full description of this course, see page 88.

Prerequisites: Completion of 27 credits of graduate coursework.

Technological Specialization Courses

Students must select three of the following seven courses:

TLMN 610 3 credits

Data-Communications Systems

This course covers the technology underlying data-communications systems, such as transmission media, modulation and demodulation, multiplexing, packet switching, hardware, software, and network operations. Topics included are fiber optics, the Integrated Services Digital Network (ISDN), T-1 and T-3 multiplexers, the open systems interconnection (OSI) model, and integrated voice-data equipment.

Prerequisites: Statistics and Calculus I, or equivalent.

TLMN 620 3 credits

Local Area Networking Systems

Note: For a full description of this course, see page 114.

Prerequisites: Statistics and Calculus I, or equivalent.

TLMN 625 3 credits

Wide Area Networking Systems

Note: For a full description of this course, see page 114.

Prerequisites: Statistics and Calculus I, or equivalent.

TLMN 630 3 credits

Satellite Communications Systems

This course analyzes issues surrounding the current and future design and use of satellite communications systems. Topics include such satellite system characteristics as type, class (bandwidth, standards, and availability), applications, interfaces, traffic patterns, network installation, performance criteria, hardware, and cost. Current and planned satellite communications are examined and compared to future needs and technologies.

Prerequisites: Statistics and Calculus I, or equivalent.

TLMN 636 3 credits

Internet Technologies

This course examines the technological base of the Internet. The first part of the course studies Internet technology including packet networking, Transport Control Protocol/Internet Protocol (TCP/IP), and Internet security and authentication (for example, firewalls, encryption, virtual private networks), Internet 2 (a new research oriented Internet) and IPV.6 (advanced Internet protocol). The second part of the course addresses evolving use of multimedia transmission (such as voice over the Internet) and private and leased service IP networks. In addition, students will gain practical experience in developing and publishing a multimedia Web site.

TLMN 645 3 credits

Wireless Telecommunications Systems

Note: For a full description of this course, see page 115.

Prerequisites: Statistics and Calculus I, or equivalent.

TLMN 672 3 credits

Network and Internet Security

Note: For a full description of this course, see page 93.

Required Systems Courses

TLMN 641 3 credits

Network Management and Design

Note: For a full description of this course, see page 115.

Note: Students who have already completed TLMN 640 may take TLMN 641 as a technological specialization course.

ITSM 637 3 credits

Information Technology Acquisition Management

Note: For a full description of this course, see page 78.

TLMN 655 3 credits

Systems Integration for Telecommunications Managers

This course delineates methods by which a telecommunication system can be put together to serve the needs of an organization. Its purpose is to prescribe a systematic process for structuring, selecting, acquiring, integrating, and managing telecommunication resources for an enterprise. The systems development life cycle is employed as it applies to telecommunication systems. Various approaches to the life-cycle process are set forth, including the associated planning techniques, project management processes, and tools currently available to support these activities. Students trace how the project manager should operate under constraints of time, cost, performance, competition, and regulation. Students work on a group project, laboratory exercises, and extended case studies.

End-of-Program Option

Management Project

TLMN 690 3 credits

and TLMN 690M (if needed) 1 credit

Telecommunications Management Project

Students demonstrate their ability to structure and complete a major project that identifies and resolves an important management or organizational issue. Students report the results of their efforts in written and oral form. The project may be developed in cooperation with students' current employers or with some organization of their choice, provided there is no conflict of interest. The project is conducted under the direction of an on-site supervisor in cooperation with a faculty advisor. Students have two semesters to complete the management project.

Prerequisite: ITSM 670.

Two-Course Option

Instead of the management project, students may take two additional courses from the approved list—one interdisciplinary course (3 credits) and one depth elective (3 credits). Prerequisites apply. The approved courses are as follows:

Interdisciplinary/Breadth Courses

Students must choose one of the following courses:

ADMN 625 3 credits

Organizational Communication

Note: For a full description of this course, see page 89.

ADMN 635 3 credits

Organizational Leadership and Decision Making

Note: For a full description of this course, see page 89.

ADMN 638 3 credits

Research Methods for Managers

Note: For a full description of this course, see page 89.

ECOM 610 3 credits

Introduction to E-Commerce

Note: For a full description of this course, see page 90.

ECOM 620 3 credits

E-Marketing

Note: For a full description of this course, see page 67.

ECOM 670 3 credits

Social, Legal, Ethical, and Regulatory Issues

Note: For a full description of this course, see page 73.

IMAN 601 3 credits

Strategic Management in a Global Environment

Note: For a full description of this course, see page 62.

IMAN 625 3 credits

International Trade and Trade Policy

Note: For a full description of this course, see page 64.

IMAN 635 3 credits

Managing Country Risk

Note: For a full description of this course, see page 65.

IMAN 661 3 credits

Area Studies: Business Strategies for Europe

Note: For a full description of this course, see page 64.

TMAN 633 3 credits

Human Resource Issues in Technology-Based Organizations

Note: For a full description of this course, see page 83.

Depth Courses

Select one:

Any other TLMN course or CSMN 601, 615, or 655.

Master of Software Engineering

The Master of Software Engineering was developed to provide a foundation in technical concepts and design techniques as well as management and teamwork approaches. The mission of the program is to prepare students to engineer the development of software products and services for industry and government in a cost-effective manner. The emphasis of the program is on implementing software engineering projects within cost and schedule by applying proven and innovative practices that overcome the shortcomings of the current paradigm.

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Degree Program

The Master of Software Engineering requires the completion of 12 courses for a total of 36 credits, which must be completed within 7 years. This degree program consists of eight (3-credit) core courses, three (3-credit) electives, and one (3-credit) practical software engineering project.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

A student may be admitted in one of four classifications: degree seeking, provisional, certificate, or decision pending. The decision-pending classification is temporary while students await final approval of admission. The admission requirements for each classification are explained in the following sections.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited institution; an overall undergraduate GPA of 3.0 on a 4.0 scale; an undergraduate degree in engineering, or a course in discrete math—for example, CMSC 150 or equivalent or CMIS 160 or equivalent; competence in using a programming language (work experience may be used); one year of experience in software design or an undergraduate degree in computer science; submission of the official transcript from the bachelor's-degree-granting institution and a transcript that notes the discrete math course; a personal statement describing work experience and current employment and discussion of how participation in the master's program will assist in achieving future goals and aspirations; and two letters of recommendation. Students are strongly encouraged to submit a résumé. The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 33) for information about the TOEFL and TWE examinations and evaluation of international education.

Provisional Status

Students may be admitted to provisional status if they have submitted the official transcript from the bachelor's-degree-granting institution, and any of the following conditions are present: the previous academic record is borderline (for example, 2.5 GPA), prerequisite coursework is insufficient, the applicant has majored in another field and has not yet clearly demonstrated abilities in the proposed new field, or the applicant has completed the bachelor's degree but has not yet submitted official verification of the last semester's work and receipt of the degree. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits are moved automatically to degree status provided that all other requirements have been satisfied. The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Classification

The decision-pending classification is short term and is meant for students who have not completed the admission process previously described. Students are encouraged to register for one of the following graduate courses before UMUC has received the official transcript from the bachelor's-degree-granting institution: MSWE 601 or TMAN 640, or an elective. Students must receive an admission decision prior to subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

Certificate Program

The Master of Software Engineering program has one certificate related to this discipline. See page 186 for more information.

Locations

Classes in the Master of Software Engineering program are currently offered at College Park, the University System of Maryland Shady Grove Center in Rockville, MD, and online. Students should check their current graduate *Schedule of Classes* to determine when courses will be offered at specific locations.

Core Courses

MSWE 601 3 credits

Issues in Software Engineering

This introductory course to the program covers basic concepts and practices within the field important to both the practitioner and the theorist, as the rate of change in software engineering technology continues to increase. It also examines current issues in systems engineering, software architectures, product assurance principles, and software project management, all described in terms of established software process improvement models. Various industry life-cycle models are presented, with examples of their use. Case studies may also be included.

MSWE 603 3 credits

Systems Engineering

This course examines the systems engineering process with special emphasis on software engineering as a discipline within systems engineering. The course includes an overview of system theory and structures, elements of the system life cycle (including systems design and development), risk and trade-off analyses, modeling and simulation, and the tools needed to analyze and support the systems process.

Prerequisite: MSWE 601 and TMAN 640, or permission.

MSWE 635 3 credits

Software Systems Development

The purpose of this course is to provide a thorough understanding of the development life cycle as it applies to large software systems. The course discusses various approaches to determining if the system implementation is correct during the traditional waterfall model (system analysis, system design, system implementation, and system use and evaluation), spiral model, and rapid prototyping. An important aspect of this course is the integration of the

principles of project management, engineering and Quality concepts to illustrate how the principles of prevention of defects may be applied across the development life cycle.

Prerequisite: MSWE 603 or permission.

MSWE 645 3 credits

System and Software Standards and Requirements

Note: For a full description of this course, see page 94.

Prerequisite: MSWE 601 or CSMN 601 or permission.

MSWE 646 3 credits

Software Design and Implementation

Note: For a full description of this course, see page 94.

Prerequisite: MSWE 601 or CSMN 601 or permission.

MSWE 647 3 credits

Software Verification and Validation

Note: For a full description of this course, see page 94.

Prerequisite: MSWE 601 or CSMN 601 or permission.

MSWE 648 3 credits

Software Maintenance

Note: For a full description of this course, see page 94.

Prerequisite: MSWE 601 or CSMN 601 or permission.

TMAN 640 3 credits

Project Management

Note: For a full description of this course, see page 74.

Electives

Students are required to take three courses (9 credits) from the following range of technical and managerial offerings.

Technical Electives

CSMN 614 3 credits

Data Structures and Algorithms

Note: For a full description of this course, see page 88.

CSMN 615 3 credits

Hardware and Operating Systems

Note: For a full description of this course, see page 91.

CSMN 616 3 credits

Distributed Computing

Note: For a full description of this course, see page 91.

CSMN 617 3 credits

Principles of Programming Languages

Note: For a full description of this course, see page 91.

CSMN 618 3 credits

Knowledge-Based Systems

Note: For a full description of this course, see page 91.

CSMN 655 3 credits

Information Risk Assessment and Security Management

Note: For a full description of this course, see page 77.

CSMN 658 3 credits

Software Reliability and Reusability

Note: For a full description of this course, see page 114.

CSMN 661 3 credits

Relational Database Systems

Note: For a full description of this course, see page 78.

CSMN 662 3 credits

Advanced Relational/Object-Relational Database Systems

Note: For a full description of this course, see page 91.

CSMN 664 3 credits

Object Oriented Database Systems

Note: For a full description of this course, see page 92.

CSMN 665 3 credits

Data Warehouse Technologies

Note: For a full description of this course, see page 92.

CSMN 666 3 credits

Database Systems Administration

Note: For a full description of this course, see page 92.

CSMN 681 3 credits

Cryptology and Data Protection

Note: For a full description of this course, see page 92.

CSMN 683 3 credits

Intrusion Detection, Incident Response, and Computer Forensics

Note: For a full description of this course, see page 93.

CSMN 685 3 credits

Security Policy, Ethics, and the Legal Environment

Note: For a full description of this course, see page 93.

MSWE 697 3 credits

Independent Research

This course is based on a proposal submitted by the student to perform research in, or other study of, a systems and software engineering topic. The student reports the results of the effort in written and oral form. The research is conducted under the guidance of an advisor.

Prerequisite: MSWE 601 or CSMN 601 or permission.

MSWE 698 3 credits

Advanced Topics in Systems and Software Engineering

This course, offered to cohort groups online or on-site at corporate locations, covers topics in systems and software engineering selected by the university and the corporate sponsor.

Prerequisite: MSWE 601 or CSMN 601 or permission.

MSWE 699 3 credits

Advanced Topics in Software Engineering

This course covers advanced topics selected by the faculty from the literature of Software Engineering to suit the interest and background of students. It may be taken for repeated credit up to a maximum of 6 credits.

Prerequisite: MSWE 601 and permission.

TLMN 610 3 credits

Data-Communication Systems

Note: For a full description of this course, see page 141.

TLMN 620 3 credits

Local-Area Networking Systems

Note: For a full description of this course, see page 114.

TLMN 625 3 credits

Wide-Area Networking Systems

Note: For a full description of this course, see page 114.

TLMN 636 3 credits

Internet Technologies

Note: For a full description of this course, see page 141.

TLMN 641 3 credits

Network Management and Design

Note: For a full description of this course, see page 115.

TLMN 645 3 credits

Wireless Telecommunications Systems

Note: For a full description of this course, see page 115.

TLMN 672 3 credits

Network and Internet Security

Note: For a full description of this course, see page 93.

Managerial Electives

TMAN 612 3 credits

Engineering Economics and Financial Analysis

Note: For a full description of this course, see page 83.

TMAN 614 3 credits

Strategic Management of Technology and Innovation

Note: For a full description of this course, see page 79.

TMAN 633 3 credits

Human Resource Issues in Technology-Based Organizations

Note: For a full description of this course, see page 83.

ITSM 637 3 credits

Information Technology Acquisition Management

Note: For a full description of this course, see page 78.

ECOM 610 3 credits

Introduction to E-Commerce

Note: For a full description of this course, see page 90.

Capstone Course

MSWE 617 3 credits

Software Engineering Project

This course may be considered as a comprehensive examination covering the application of the tools, skills, and techniques the students have acquired in the course of their studies. This course provides experience in applying software-engineering techniques by giving the students an opportunity to produce software when working in teams under the schedule constraints commonly experienced in industry. The instructor will emulate the vagueness shown by typical customers in describing requirements. The instructor serves as a guide and mentor, not as a traditional teacher. The students are expected to have acquired the knowledge of what to do and how to do it from the prerequisite classes. It is up to the students to form their own teams (organization) and schedule their work to meet the deadlines imposed by the contract (syllabus).

Prerequisites: All core courses and at least two electives; or permission.

Dual Master Degree Programs

Master of International Management/ Master of Business Administration

The purpose of the dual Master of International Management (MIM) and the Master of Business Administration (MBA) is to enable students to extend the breadth and depth of their management study. Based upon the shared curricula of both programs, dual degree students may earn both the MIM and MBA master's degrees for substantially fewer credits than if each program were completed separately. Thus, the joint MIM/MBA may be completed with 54 to 57 credits rather than 78 to 81 credits.

(After completion of the Master of International Management, 18 additional credits are required for the Executive dual degree. See page 176 for more details.)

All of the requirements for both degrees must be completed within 7 years. All MBA work must be completed in 5 years.

Degree Program

Students in the dual MIM/MBA program can choose to complete the MIM first and then take additional credits to earn the MBA or complete the MBA first and then take additional credits to earn the MIM.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

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Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

A student may be admitted in one of four classifications: degree seeking, provisional, certificate, or decision pending. The decision-pending classification is temporary while students await final approval of admission. Admission requirements for each classification are explained below.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited college or university, an overall undergraduate GPA of at least 3.0 on a 4.0 scale, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section International Applicants (page 33) for information about TOEFL and TWE examinations and evaluation of international education.

Provisional Status

Provisional status for the MIM may be granted to students who fall slightly below the criteria for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits and who meet all entrance requirements are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited college or university, an undergraduate grade-point average of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement.

Provisional status for the MBA may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Those who achieve a 3.0 GPA during completion of seven MBA credits and who meet all entrance requirements are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor-degree granting institution, and a personal statement.

(See page 164 for information on the Executive MBA as an alternate program.)

The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Status

For the MIM program, the decision-pending classification is short term and is meant for students who have not completed the admission process described above. Students may enroll in one of the following graduate courses before UMUC has received the official college transcript from the bachelor's-degree-granting institution: IMAN 601, ADMN 630, ADMN 631, or IMAN 605. Students must receive an admission decision prior to subsequent enrollments.

MBA students in decision-pending status can register for AMBA 600 MBA Fundamentals, and UCSP 610E Library Skills.

The UMUC Graduate School reserves the right to request additional transcripts.

Area Studies Option

Upon approval of the program director and the dean, students who have language proficiency and experience in a particular region of the world may receive transfer credit for up to two relevant graduate courses taken at another university as substitutes for courses in the IMAN curriculum. Three criteria must be met by the student petitioning to enter the Area Studies option: working knowledge of a language relevant to the region or country in question, demonstrated commitment to the region (nationality, work experience, previous coursework, and so forth), and relevance of the transferred courses to the IMAN curriculum (regional economics, trade, business, and so forth). Other students interested in Area Studies should consider IMAN 661. See the description on page 64.

Locations

Classes in the Master of International Management program are currently offered at College Park and at the Shady Grove Center. Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations. MBA courses are offered online.

Program Structure for MIM to Dual Degree

Students must first complete the entire MIM degree program (36–39 credits) and meet all the requirements for graduation. Upon application, students will be awarded an MIM. The MIM "alumni" can then earn an MBA degree (second actual degree document) by completing 18 semester hours of MBA work. The choice of MBA seminars will depend on the MIM specialty track.

Students who complete the international commerce and international marketing tracks of the MIM will take these courses which are 6 credits each:

- Seminar 601 (AMBA 601D)—Organization and Management Processes
- Seminar 604 (AMBA 604D)—Technology and Operations Management
- Seminar 605 (AMBA 605D)—Economics of Management Decisions

Students who complete the international finance track of the MIM will take these courses which are 6 credits each:

- Seminar 601 (AMBA 601D)—Organization and Management Processes
- Seminar 603 (AMBA 603D)—Marketing of New Ideas
- Seminar 604 (AMBA 604D)—Technology and Operations Management

Structure for MBA to Dual Degree

Students must first complete the entire MBA degree program (43 credits) and meet all requirements for graduation. Upon application, students will be awarded an MBA. MBA students who elect the dual degree program must take 12 additional MIM credits from the following list:

- IMAN 601 Strategic Management in a Global Environment

and

- IMAN 615 Foreign Investment and Strategic Alliances

Plus, select two other courses from among the following:

- IMAN 635 Managing Country Risk
- IMAN 640 International Marketing Management
- IMAN 645 International Legal & Tax Environment
- ADMN 639 Multinational Financial Management
- IMAN 661, 662 or other Area Studies Courses depending upon the region of interest.

All of the requirements for both degrees must be completed within 7 years.

All MBA work must be completed in 5 years.

Additional information on the combined degree program will be posted at *www.umuc.edu/gsmt/mbamim.html*.

Core Courses

ADMN 639 3 credits

Multinational Financial Management

Note: For a full description of this course, see page 67.

Note: Students should take ADMN 631 before enrolling in this course.

IMAN 601 3 credits

Strategic Management in a Global Environment

Note: For a full description of this course, see page 62.

Note: This course is strongly recommended as the first course for IMAN students.

IMAN 615 3 credits

Foreign Investment and Strategic Alliances

Note: For a full description of this course, see page 63.

IMAN 635 3 credits

Managing Country Risk

Note: For a full description of this course, see page 65.

IMAN 640 3 credits

International Marketing Management

Note: For a full description of this course, see page 65.

IMAN 645 3 credits

The International Legal and Tax Environment

Note: For a full description of this course, see page 65.

IMAN 661 3 credits

Area Studies: Business Strategies for Europe

Note: For a full description of this course, see page 64.

AMBA/OMBA 601 6 credits

The Role of Managers and Organizations in Society

Note: For a full description of this course, see page 47.

AMBA/OMBA 603 6 credits

The Marketing of New Ideas

Note: For a full description of this course, see page 48.

AMBA/OMBA 604 6 credits

Technology and Operations Management

Note: For a full description of this course, see page 48.

AMBA/OMBA 605 6 credits

The Economics of Management Decisions

Note: For a full description of this course, see page 48.

AMBA/OMBA 606 6 credits

Organizations and the External Environment

Note: For a full description of this course, see page 49.

Master of Science in Accounting and Financial Management

The purpose of the dual degree programs with the Master of Science accounting and financial management (MSAF) is to enable students to extend the breadth and depth of their graduate studies beyond the specialities of accounting and financial management. Three MSAF dual degrees are offered: MSAF plus the Master of Science (management) with accounting specialization, MSAF plus the Master of Science (management) with financial management specialization, and the Master International Management with financial management specialization. Based on the shared curricula of both programs, the dual degrees may be earned for substantially fewer credits than if each program were completed separately. Detail for each dual degree combination is provided below.

Degree Program

Students in the dual MSAF program can chose to complete the MSAF first and then take additional credits to earn the MSM-FM, MSM-ACCT, or the IMAN-FM or complete the MSM or IMAN first and then take additional credits to earn the MSAF.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

A student may be admitted in one of four classifications: degree seeking, provisional, certificate, or decision pending. The decision-pending classification is temporary while students await final approval of admission. Admission requirements for each classification are explained below.

Staff

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Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited college or university, an overall undergraduate GPA of at least 3.0 on a 4.0 scale, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section International Applicants (page 33) for information about TOEFL and TWE examinations and evaluation of international education.

Provisional Status

Provisional status for the MSAF may be granted to students who fall slightly below the criteria for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies.

Locations

Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations.

Dual Degree Core Courses

Students must complete the following 12 courses and then complete the requirements for the dual degree of their choosing as detailed here.

MSAF 12 courses

Accounting

Five of the following six courses:

- ACCT 609 E-Commerce Accounting
- ACCT 610 Financial Accounting
- ACCT 611 Management Accounting
- ACCT 612 Auditing Process
- ACCT 613 Federal Income Taxation
- ACCT 614 Accounting Information Systems

Financial Management

- ADMN 631 Financial Management in Organizations
- ADMN 632 Financial Management of Current Operations
- ADMN 633 Long-Term Financing of Organizations
- ADMN 634 Financial Markets and Investments
- ADMN 639 Multinational Financial Management

Breadth course (one of the following)

- IMAN 601 Strategic Management in a Global Environment
- IMAN 625 International Trade and Trade Policy
- IMAN 635 Managing Country Risk
- IMAN 640 International Marketing Management
- IMAN 661 Business Strategies for Europe
- TMAN 632 Organizational Performance Management
- TMAN 640 Project Management

Capstone

- ADMN 619 Accounting and Financial Management Capstone

Program Structure for MSAF to MSM–FM 19–20 courses

MSM–FM

Students must take 7 or 8 of the following courses plus Financial Management and Breadth courses listed above.

MSM Core

- ADMN 601 The Manager in a Technological Society
- ADMN 625 Organizational Communication and Group Development
- ADMN 635 Organizational Leadership and Decision Making
- ADMN 638 Research Methods for Managers
- ADMN 651 Capstone
- MSM-FM Course
- ADMN 655 Strategic Financial Management
- ADMN 690 Management Project

or

- ADMN 636 Cost Management

Note: Students who do not take ACCT 611 in the MSAF must take ADMN 636 even if they take ADMN 690.

Program Structure for MSAF to MSM–ACCT 19 courses

MSM Core 7 courses

- ADMN 601 The Manager in a Technological Society
- ADMN 625 Organizational Communication and Group Development

- ADMN 635 Organizational Leadership and Decision Making
- ADMN 638 Research Methods for Managers
- ADMN 651 Capstone
- MSM-ACCT Courses
- ACCT 6XX Students must take the sixth Accounting Track Course not taken in fulfilling the MSAF requirements
- ACCT 615 Accounting Capstone

Program Structure for MSAF to IMAN–FM

Breadth courses, as detailed under the heading "Dual Degree Core Courses," are treated as electives in the IMAN program.

IMAN Core

- IMAN 601 Strategic Management in a Global Environment
- IMAN 605 Intercultural Leadership and Communications
- IMAN 610 Economics in a Global Context
- IMAN 615 Foreign Investment and Strategic Alliances
- IMAN 625 International Trade and Trade Policy
- IMAN 650 Managing Overseas Operations
- IMAN–FM Course
- IMAN 645 The International Legal and Tax Environment

End-of-Program Option

- IMAN 690 Management Project

or

One of the following (in lieu of management project)

- IMAN 635 Managing Country Risk
- IMAN 640 International Marketing Management
- IMAN 661 Area Studies: Business Strategies for Europe

Note: One of the courses for the two-course option has already been taken as the MSAF breadth course.

Master of Science in Electronic Commerce/Master of Business Administration

The purpose of the dual Master of Science in electronic commerce (MSEC) and the Master of Business Administration (MBA) is to enable students to extend the breadth and depth of their management study. Based upon the shared curricula of both programs, dual degree students may earn both the MSEC and MBA master degrees for substantially fewer credits than if each program were completed separately.

Students may elect to pursue a dual MSEC/MBA degree program. To do so, the student must complete the entire 36-credit MSEC degree followed by 24 credits from the MBA program (AMBA 602, AMBA 604, AMBA/OMBA 605, and AMBA/OMBA 606, each of which is worth 6-credits) for a total of 60 credits for both master's degrees. Conversely, a student in the MBA program may pursue the dual degree option by taking 18 credits from the MSEC core curriculum, for a total of 61 credits for both degrees.

Degree Program

Students in the dual MSEC/MBA program can choose to complete the MSEC first and then take additional credits to earn the MBA or complete the MBA first and then take additional credits to earn the MSEC.

Certificate Program

Individuals who do not wish a full master's degree, and those who may already hold a master's degree, may choose to earn a 15-credit post-baccalaureate certificate in e-commerce. All the courses earn full graduate credit that can be applied toward the master's degree in e-commerce (for more information, see page 95).

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

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Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

A student may be admitted in one of four classifications: degree seeking, provisional, certificate, or decision pending. The decision-pending classification is temporary while students await final approval of admission. Admission requirements for each classification are explained below.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited college or university, an overall undergraduate GPA of at least 3.0 on a 4.0 scale, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section International Applicants (page 33) for information about TOEFL and TWE examinations and evaluation of international education.

Provisional Status

Provisional status may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Classification

Decision-pending classification is short term and is meant for students who have not completed the admission process described previously. Students may enroll in one of the following graduate courses before UMUC has received the official college transcript from the bachelor's-degree-granting institution: ECOM 610, ECOM 640, or ECOM 620. Students must receive an admission decision before subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

Locations

All Master of Science in electronic commerce classes are offered online.

Program Structure from MSEC to MSEC/MBA

Students first complete the entire MSEC degree program (36 credits) and meet all requirements for graduation. A MSEC degree will be granted upon completion of the MSEC program at time of graduation application. These MSEC "alumni" can then earn an MBA degree (second actual degree document) by completing 24 credits of MBA work.

These credits are as follows:

- AMBA/OMBA 602—The Dynamics of Individuals and Groups at Work
- AMBA/OMBA 604—Technology and Operations Management
- AMBA/OMBA 605—The Economics of Management Decisions
- AMBA/OMBA 606—Organizations and the External Environment

Program Structure for MBA to MSEC/MBA Degree

Students who first complete all degree requirements for the MBA degree (43 credits) may earn an MSEC by taking an additional 18 credits chosen from the MSEC core curriculum. Students should select six of the eight 3-credit ECOM courses listed below. MBA students cannot take MSEC coursework until they have completed OMBA/AMBA 607A. The dual degree program will allow students to obtain breadth and depth of study from the combined degrees.

- ECOM 610 Introduction to E-Commerce
- ECOM 620 E-Marketing
- ECOM 630 Information Risk Assessment and Security Management
- ECOM 640 Internet Principles and Applications
- ECOM 650 E-Commerce Applications and Operations
- ECOM 660 E-Commerce Financial Management and Accounting
- ECOM 670 Social, Legal, Ethical and Regulatory Issues
- ECOM 680 E-Commerce Application Software

Master of Science in Management/ Master of Business Administration

The purpose of the dual Master of Science in management (MSM) and the Master of Business Administration (MBA) degrees is to provide students with a path to pursue both breadth and depth study and to achieve two academic master's degrees from UMUC for 54 to 57 credits. There is shared curriculum content between the core of the Master of Science in management and the Master of Business Administration (24 credits).

(After completion of the Executive Master of Science in management, 18 additional credits are required for the Executive dual degree. See page 177 for more details.)

All requirements for both degrees must be completed within 7 years. All MBA work must be completed within 5 years. Additional information on the combined degree program can be found at *www.umuc.edu/gsmt/mbamsm.html*.

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Degree Program

Students in the dual MSM/MBA program can chose to first complete the MSM and then take additional credits to earn the MBA or complete the MBA and then take additional credits to earn the MSM.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

A student may be admitted in one of four classifications: degree seeking, provisional, certificate, or decision pending. The decision-pending classification is temporary while students await final approval of admission. Admission requirements for each classification are explained below.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited university or college; an overall undergraduate GPA of at least 3.0 on a 4.0 scale, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 33) for information about the TOEFL and TWE examinations and evaluation of international education.

Provisional Status

Provisional status for the MBA may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Those who achieve a 3.0 GPA during completion of 6 MBA credits and who meet all entrance requirements are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum

admission requirements for provisional status are a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement.

The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Status

The decision-pending classification is short term and is meant for students who have not completed the admission process described above. Students may enroll in one of the following graduate courses before UMUC has received the official college transcript from the bachelor's-degree-granting institution: ADMN 601, ADMN 625, or ADMN 635. Students must receive an admission decision prior to subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

MBA students in decision-pending status can register for AMBA 600 MBA Fundamentals and/or UCSP 610E Library Skills.

Locations

Classes in the MSM program usually meet in the evening, once a week during the fall and the spring semesters and twice a week during the summer session. (Students in online courses are expected to access their classes several times each week.) Core courses are scheduled at the following nine locations throughout the Maryland and Washington, D.C. area: Annapolis, downtown Baltimore, California, Catonsville, College Park, Leonardtown/Patuxent, Rockville/Shady Grove, Waldorf, and downtown Washington, D.C. Specialty track courses may require attendance at selected sites because of enrollment requirements established by UMUC. Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations. MBA classes are offered in both an online and face-to-face format.

Program Structure from MSM to MSM/MBA

Students first complete the entire MSM degree program (36–39 credits) and meet all requirements for graduation. (An MSM degree will be granted upon completion of the MSM program at time of graduation application.) These MSM "alumni" can then earn an MBA degree (second actual degree document) by completing 18 credits of MBA work.

These credits are as follows:

- Seminar IV (AMBA/OMBA 604D)—Technology and Operations Management

and

- Seminar VI (AMBA/OMBA 606D)—Organizations and the External Environments

then

- Seminar III (AMBA/OMBA 603D)—The Marketing of New Ideas

or

- Seminar V (AMBA/OMBA 605D)—The Economics of Management Decisions

Selection of Seminar III versus Seminar V must be approved by the Graduate School program director for the MSM program. Alumni of the marketing track must complete Seminar V; alumni of the finance track must complete Seminar III.

Program Structure from MBA to MSM/MBA

Students first complete the entire MBA degree program (43 credits) and meet all requirements for graduation. (An MBA degree will be granted upon completion of the MBA program at time of graduation application.) MBA students who elect the dual degree program will complete three MSM track credits as part of Seminar VII of the MBA. MBA "alumni" can then earn an MSM degree (second actual degree document) by completing 12 additional credits of an MSM track; therefore, a total of 15 credits in an MSM track will be required. MBA students who also want the MSM degree must declare the dual MSM/MBA before the beginning of Seminar VII of the MBA.

Additional Requirements

All students are required to complete AMBA/OMBA 604D and AMBA/OMBA 606D. Students with a marketing MSM are required to take AMBA/OMBA 605D, and students with a financial management MSM are required to take AMBA/OMBA 603D. All other students have the option of selecting either AMBA/OMBA 603D or AMBA/OMBA 605D.

Core Courses

AMBA/OMBA 603 — 6 credits

The Marketing of New Ideas

Note: For a full description of this course, see page 48.

AMBA/OMBA 604 — 6 credits

Technology and Operations Management

Note: For a full description of this course, see page 48.

AMBA/OMBA 605 — 6 credits

The Economics of Management Decisions

Note: For a full description of this course, see page 48.

AMBA/OMBA 606 — 6 credits

Organizations and the External Environment

Note: For a full description of this course, see page 49.

Master of Science in Technology Management / Master of Business Administration

This dual degree provides the student with both (1) the intellectual depth of managing technological change as a Master of Science degree in technology management and (2) the intellectual breadth of general knowledge as a Master of Business Administration degree. The Master of Science in technology management/Master of Business Administration program requires a completion of 60 semester hours, which at that time, the student will receive two degrees: Master of Science in technology management and a Master of Business Administration. The Master of Science portion of the dual degree requires the completion of 36 semester hours and the Master of Business Administration portion requires an additional 24 semester hours.

Additional information is available at *www.umuc.edu/grad/mbatman.html*.

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Degree Program

Graduates can obtain a M.S. in technology management degree and earn an additional MBA degree. Students must complete all degree requirements for both degrees.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

A student may be admitted in one of four classifications: degree seeking, provisional, certificate, or decision pending.

For certificate requirements, see page 178.

The decision-pending classification is temporary while students await final approval of admission. Certificate status exists for students pursuing the graduate certificate program.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited university; an undergraduate GPA of 3.0 on a 4.0 scale; submission of the official transcript from the bachelor's-degree-granting institution; and a personal statement.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 33) for information about the TOEFL and TWE examinations and evaluation of international education.

Provisional Status

Provisional status may be granted to students who fall slightly below the criteria for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in

graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits are moved automatically to degree status. No courses may be repeated while the student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university; an undergraduate grade-point average of at least 2.5 on a 4.0 scale in the student's major area of study; submission of the official transcript from the bachelor's-degree-granting institution; and a personal statement.

The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Classification

Decision-pending classification is short term and is meant for students who have not completed the admission process as described above. Students may enroll in one of the following graduate courses before UMUC has received the official college transcript from the bachelor's-degree-granting institution: TMAN 611, TMAN 612, or TMAN 614. Students must receive an admission decision before subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

MBA students in decision-pending status can register for AMBA 600 MBA Fundamentals and/or UCSP 610E Library Skills.

Locations

Classes in the M.S. in technology management program are currently offered at College Park, Fort Meade, the University System of Maryland Shady Grove Center in Rockville, and Annapolis. Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations.

Program Structure TMAN/MBA

Technology Management Courses

Six Required Courses

- TMAN 611, TMAN 621, TMAN 632, TMAN 640, TMAN 661, and TMAN 671

Six Elective Courses

- BIOT 640, BIOT 643, BIOT 646, CSMN 615, CSMN 636, CSMN 661, ECOM 610, ECOM 630, ECOM 640, ECOM 650, ECOM 660, ENVM 644, ENVM 649, ENVM 650, TLMN 645, TMAN 622, TMAN 623, TMAN 636

MBA Seminars

AMBA/OMBA 602 — 6 credits

The Dynamics of Individuals and Groups at Work

Note: For a full description of this course, see page 48.

AMBA/OMBA 603 — 6 credits

The Marketing of New Ideas

Note: For a full description of this course, see page 48.

AMBA/OMBA 605 — 6 credits

The Economics of Management Decisions

Note: For a full description of this course, see page 48.

AMBA/OMBA 606 — 6 credits

Organizations and the External Environment

Note: For a full description of this course, see page 49.

For more information on the Executive MBA, see page 164.

All requirements for both degrees must be completed within 7 years. All MBA work must be completed within 5 years.

Energy Resources Management and Policy

The purpose of the energy resources management and policy track is to provide knowledge of the technologies, economics, management, and policy dimensions of energy systems. The track has three major emphases: energy and resources, economics, and environment.

The energy resources management and policy track is designed to augment the following master's programs: environmental management, international management, management, technology management, and the dual technology management/MBA. The track courses will also be available as electives to other programs in the Graduate School. There are five courses in the track that supplement the program core courses.

Track Courses (5):

ENER 601 — 3 credits

Energy Resources

Note: For a full description of this course, see page 68.

ENER 602 — 3 credits

Energy Economics

Note: For a full description of this course, see page 68.

ENER 603 — 3 credits

Energy Infrastructure Management

Note: For a full description of this course, see page 68.

ENER 604 — 3 credits

New Technologies in Energy Management

Note: For a full description of this course, see page 68.

ENER 646 — 3 credits

Environmental/Energy Law and Policy Development

Note: For a full description of this course, see page 68.

Note: Same course as ENVM 646, but those pursuing the energy resource track must take ENER 646, unless taken before fall 2002.

Executive Degree Programs

Executive Master of Business Administration

The Executive Master of Business Administration is a 43-credit graduate degree in a format tailored to busy professionals. This accelerated 21-month program enables career minded individuals with at least 5 years of management experience to make full use of their management skills while meeting degree requirements. Courses are delivered through a combination of face-to-face Saturday seminars and online study. Special features of the Executive Master of Business Administration program include an integrated curriculum focusing on real world applications, a global business perspective, a distinctive closing strategy project with a corporate sponsor, management assessment and leadership development through the National Leadership Institute, and an international study trip.

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Composition of the Executive Class

Each class has approximately 25–30 participants who progress through the program as a group. The professional backgrounds of the class members is vital to the learning experience and is further enhanced through a variety of teaching methods. In addition, group participation and interaction over the course of the seminars is designed to contribute significantly to a broader understanding of organizational and management issues.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

Participants are selected on the basis of the following criteria: a minimum of five years of management experience; a current position as a mid- or senior-level manager; a bachelor's degree from a regionally accredited university or college; and a 3.0 overall GPA on a 4.0 scale for degree-seeking participants or at least a 2.5 GPA in the major area of study for provisional participants. In addition, candidates must submit a personal statement of goals and objectives, two letters of reference, and an official transcript from the bachelor's-degree-granting institution. Qualified candidates will have a personal interview with the program director. All participants must have access to a computer and the Internet, and a working knowledge of software programs as described on page 38. The UMUC Graduate School reserves the right to request additional transcripts.

Required Library Research Skills Course

To ensure participants are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit

library research course. All students must successfully complete UCSP 610 or UCSP 610E Library Skills for the Information Age within their first 7 credits of study.

Application

A complete application consists of an application form; the official transcript from the bachelor's-degree-granting institution; a personal statement that indicates experience, current employment, and goals that may be fulfilled through participation in the program; two letters of reference; and the application fee.

Fees

The fees for this program are those in effect at the time of publication and are subject to change. Information on tuition can be viewed at *www.umuc.edu/tuition*.

Neither tuition remission for University System of Maryland employees nor tuition remission under the Golden ID program may be used for the Executive Master of Business Administration program.

Locations

Face-to-face classes for each Executive MBA are held at a single location in the Washington, D.C. metropolitan area throughout the 21-month program. This location may be the UMUC Inn and Conference Center in MD, the USM Shady Grove Center in Rockville, MD, or another facility in Northern Virginia or Washington, DC.

Prospective candidates should check the executive program Web site at *info.umuc.edu/executiveprograms* for the location of the next seminar.

Format

The Executive Master of Business Administration is an accelerated 21-month program using the seminar format. Instruction includes lectures, case studies, structured discussions, guest speakers, videos, computer exercises, written projects, and oral presentations. The classes are held every other Saturday from 8:30 a.m. to 5 p.m. and are supplemented with UMUC's online (Web-based) instruction to provide maximum flexibility and convenience.

Through team projects that combine Internet technology and in-person seminars, the program builds the skills necessary to lead and manage geographically dispersed organizations.

The program consists of seven seminars. Each seminar includes examinations, papers, and/or presentations. The end-of-program project in Seminar VII is the capstone learning experience that provides participants with a unique opportunity to plan and complete a strategic or operational business plan for a sponsor organization.

Seminar I

XMBA 601 — 7 credits

Overview of Management Theory, Strategic Thinking, and Global Management

This seminar introduces the concepts and theories that are essential building blocks of management thinking. Topics covered are systems thinking, the competitive structure of industry, technology trends, the future of organizations, and global challenges. These themes are incorporated throughout the program and further developed in subsequent seminars. Participants will have an opportunity for leadership assessments by the National Leadership Institute and will receive feedback on presentation style and organizational quality.

Seminar II

XMBA 602 — 6 credits

Organizational Leadership, Management of Human Resources, and Business Ethics

This seminar addresses issues that confront managers working with diverse populations in a period of rapid technological change. The focus is on managing human resources through organizational change, including understanding and affecting organizational cultures and establishing and maintaining an ethical climate. It introduces strategies and methods for aligning individual interests and organizational needs in order to reach organizational goals. Participants will evaluate how individual, group, organizational, and societal outcomes are affected by the nature of work and the perceived value and meaning of work.

Through self assessment instruments, case analyses, exercises, simulations, and discussions, participants will analyze and practice communication skills and decisions that motivate and effectively organize individuals and groups.

Seminar III

XMBA 603 6 credits

Marketing, Entrepreneurship, and New Product Development

This seminar focuses on business development strategies from the perspective of customer needs and preferences. It introduces market research approaches, and product and service design processes and life cycles. Through workshops, team projects, and case studies, participants will develop effective marketing programs that recognize the increasing importance of electronic commerce as a distribution channel.

Seminar IV

XMBA 604 6 credits

Technology and Operations Management

This seminar focuses on the latest information technologies and operations management techniques that enable an organization to operate around the world and around the clock. It introduces tools that managers use to measure operational efficiency and effectiveness, including statistical process control, decision trees, forecasting techniques, expert systems, and organizational benchmarking. Participants will practice effective project management techniques important to introducing new products and analyzing and improving an organization's processes.

Seminar V

XMBA 605 6 credits

Financial Systems and Management Accounting

This seminar focuses on economic decision making and the techniques and tools managers use to analyze the financial performance of their organizations. Performance measurement techniques include economic value added (EVA™), the balanced scorecard, open-book management, and activity-based costing. The theory of constraints is introduced to analyze the value an organization provides to the customer. Other tools are used to value intellectual property and whole businesses for purposes of joint ventures, mergers, or acquisitions. In assessing the broader economic environment of an organization, participants will analyze the changing global economy, including the evolution of financial markets in response to rapidly expanding worldwide investment opportunities.

Seminar VI

XMBA 606 6 credits

International Business, Trade, and Business Law

This seminar provides insight into how various strategic facets must be managed in the global context of trading and regulatory systems and the growing concerns about national competitive advantage. Participants will address the impact on corporate decision making of laws, regulatory structures, and public policies at the local, state, national, and international levels. In addressing national competitive advantage, participants will consider the impact of technology innovation, international trade, and business and antitrust laws on business organizations.

Seminar VII

XMBA 607 6 credits

Strategy and Capstone Project

In this seminar, participants are teamed with sponsoring organizations to develop a strategic action plan that integrates management techniques and methodologies covered in the previous seminars. Through their focus on strategic models, strategy formulation and implementation, organizational assessment, and the creation of business plans, participants deepen their insight into strategic thinking and practical application. Working in teams, participants develop business plans for their sponsoring organizations that may include a new market entry strategy, a product development project, or an organizational assessment with appropriate change strategy.

Executive Master of Science in Information Technology

The Executive Master of Science in information technology is a 36-credit program designed to develop the critical competencies in computer systems management and telecommunications management needed by senior executives who serve in the capacity of chief information officer, chief technology officer, and other leadership positions where knowledge of information technology (IT) is a critical component. Topics covered include the role of information in decision making, organizational needs assessment, the relationship of an IT strategic plan to the organizational strategic plan, data communication systems, computer networks, telecommunication networks, satellite and wireless systems, use of multimedia, management support systems, and hardware/software acquisition. This program offers the flexibility and convenience of a combination of face-to-face and online classes. Face-to-face classes are held on alternating Saturdays.

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Composition of the Executive Class

Each Executive Master's Program in information technology class, with an average of 25 participants, progresses through the program as a group. The organizational and technical experience of the class members is vital to the learning experience and is further enhanced through a variety of teaching methods. Active participation is expected from each member of the group. The interaction afforded by the seminars is designed to contribute significantly to a broad understanding of organizational solutions in an increasingly technological environment.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

Participants are selected on the basis of the following criteria: a minimum of 5 years of business or management experience; a current position as a mid- or senior-level manager; a bachelor's degree from a regionally accredited university or college in information technology, engineering, or software engineering, a 3.0 overall GPA on a 4.0 scale for degree-seeking participants or at least a 2.5 GPA in the major area of study for provisional participants, a personal statement of goals and objectives, submission of an official transcript from the bachelor's-degree-granting institution, and a personal interview with the program director. All participants must have access to a computer and the Internet, and a working knowledge of software programs as described on page 38. The UMUC Graduate School reserves the right to request additional transcripts.

Required Library Research Skills Course

To ensure participants are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 or UCSP 610E Library Skills for the Information Age within their first 6 credits of study.

Application

A complete application consists of an application form; the official transcript from the bachelor's-degree-granting institution; a personal statement that indicates experience, current employment, and goals that may be fulfilled through participation in the program; and the application fee.

Fees

The fees for this program are those in effect at the time of publication and are subject to change. Information on tuition can be viewed at *www.umuc.edu/tuition*.

Neither tuition remission for University System of Maryland employees nor tuition remission under the Golden ID program may be used for the Executive Master's Program in information technology program.

Locations

All classes in the Executive Master's Program in information technology are held at the same location in the Washington, D.C. metropolitan area throughout the 18-month program. This location may be the UMUC Inn and Conference Center in Adelphi, MD, the USM Shady Grove Center in Rockville, MD, or another facility in northern VA or Washington, D.C.

Prospective candidates should check the executive program Web site at *info.umuc.edu/executiveprograms* for the location of the next seminar.

Format

The Executive Master's Program in information technology is an accelerated 18-month program using the seminar format. Instructional methodologies include lectures, case studies, structured discussions, guest speakers, videos, computer exercises, written projects, and oral presentations. The classes are held every other Saturday from 8:30 a.m. to 5 p.m. and are supplemented with UMUC's online instruction to provide maximum flexibility and convenience.

The program consists of six 6-credit seminars. Each seminar includes examinations, papers, and/or presentations.

Hardware/Software Requirements

All participants are required to have an Internet ready notebook computer.

Seminar I

XMIT 601 — 6 credits

IT and the Industry and Strategic Management

Seminar I presents an overview of the information technology (IT) industry. Its goal is to impart an understanding of how the many elements of information technology work and what their limitations are. Mathematical and physical concepts helpful in thinking about the capabilities of information technology and its applications are presented. These topics include information theory, digitization, probability, transmission media, integrated circuits, and optical switching. Also, the seminar describes concepts essential to information security applications, such as various encryption schemes and measures for assuring personnel and physical security.

Students then apply strategic analysis techniques to business policy and organizational development. Emphasis is placed on linking technology policy with corporate strategy and the identification of technology options appropriate for the business or organizational strategy being executed. Strategy is covered both at the business unit and corporate (organizational) level. Topics covered include historical perspectives on strategic technology planning, external and internal strategic analysis, technology forecasting, benchmarking, corporate intelligence, knowledge management, and implementation and control strategies.

Seminar II

XMIT 602 — 6 credits

Human Resources, Leadership and Project/Financial Management

In Seminar II, issues, theories, and procedures associated with the effective management of human resources in technology-based organizations are presented. Emphasis is placed on the integration of human resource planning with corporate strategic planning. Its purpose is to help each student appreciate the value of effective management of

people in a variety of organizational settings, and to provide the methods to do so. Topics include leadership requirements for managing innovative and creative people, structuring teams, management of conflict and change, communication techniques, feedback and the processes involved in project management with a focus on group and team formation and group dynamics. Career decisions within technical organizations, including the requirements for transition to management, dual career paths for scientific/technical personnel, performance incentives, and the manager's role in subordinate appraisal and development, are discussed.

Project management concepts and techniques are then discussed. Project planning, organizing, team building, and effective control mechanisms are presented. The key management aspects and proven techniques that differentiate project management from other types of management are fully discussed. Topics include effective project management styles, critical factors for success, organizational support systems, project authority, and ethics in project execution. Cost, schedule and technical planning, and control are stressed. Project management software is used for creating a typical project plan and tracking the project. Finally, students identify processes to analyze and manage financial information in technology-intensive organizations with rapid product/service cycles and high value-added intellectual property. Students are introduced to the preparation of a variety of financial analysis tools from simple balance sheets to activity-based costing. The basis of asset valuation is discussed, including capital and technological assets, intellectual property, and intangibles.

Seminar III

XMIT 603 6 credits

Advanced Topics in IT and Systems Security and Risk Management

In Seminar III, the most successful strategies and approaches for achieving a high-performing organization are studied. Organizational effectiveness is examined with an emphasis placed on performance capabilities such as adaptability, flexibility, responsiveness, decisiveness, speed, quality, value, and customer satisfaction. Strategies and approaches of organizational effectiveness based on the latest research findings as well as "best practice" used by "world-class" organizations, are examined.

The proliferation of corporate databases and the development of telecommunication network technology as gateways or invitations to intrusion are next examined. Ways of investigating the management of the risk and security of data and data systems are presented as a function of design through recovery and protection. Issues of risk and security as they relate to specific industries and government are major topics. Examples are presented of how major technological advances in computer and operating systems have placed data, as tangible corporate assets, at risk. Quantitative sampling techniques for risk assessment and for qualitative decision making under uncertainty are explored.

Seminar IV

XMIT 604 6 credits

Computing and Software Technology

In Seminar IV, the major hardware and system software components and underlying technologies that are the basis of the modern digital computer are examined. Major developments in the evolution of computers are reviewed. The similarities and differences between mainframes, minicomputers, and microprocessors are investigated. Supercomputer, parallel processor, and distributed system architectures are examined. Various types of storage media and input/output devices are discussed. An overview of system software elements, including operating systems and middleware, is also presented. Advanced topics such as optical computers and biomolecular computers are also discussed.

Technology, engineering practices, and business economics behind the wide variety of modern software-intensive systems are then studied. Foundations of software engineering are examined. Classes of application domains including real-time systems and transaction-based systems are analyzed. The practices used in developing small-scale and large-scale software systems are evaluated. Modern issues including design of the human-computer interface, software

product liability, and certification of software engineers are discussed. The seminar concludes by investigating the structure, environment, and possible future of the software industry.

Seminar V

XMIT 605 6 credits

Data Communications and Internet Technologies

Seminar V begins with a study of data communication fundamentals. These include digital and analog signals; modulation; circuit and packet switching; multiple access schemes such as Frequency Division Multiple Access (FDMA), Time Division Multiple Access (TDMA) and Code Division Multiple Access (CDMA); and telecommunication standards such as the Open System Interconnect (OSI) Model. The course then moves to telecommunications networks with a review of Local Area Networks (LANs) including topologies, contention access methods, and internetworking devices such as bridges, routers and gateways. Also covered are Wide Area Networks (WANs) including the Public Switched Telephone Network (PSTN), wireless networks such as cellular, Personal Communication Systems, and wireless data, the Integrated Services Digital Network (ISDN), X.25, Frame Relay, and Asynchronous Transfer Mode (ATM). Finally, we examine the network convergence issue; that is, one network for data, voice, images, and video.

The focus of the seminar then moves to the Internet, addressing both its technological basis and its applications. Internet technology, including packet networking, Transmission Control Protocol/Internet Protocol (TCP/IP), Internet security, Internet 2, and IPV.6, are examined. Internet applications and its evolving use for multimedia transmission, private and leased service IP networks, e-commerce, data warehousing, data mining, and policy issues such as universal service and access are evaluated.

Seminar VI

XMIT 606 6 credits

Systems Engineering and Capstone

Seminar VI begins with the study of Systems Engineering as an interdisciplinary approach to developing complex systems that satisfy a client mission in an operational environment. This topic is an examination of the systems engineering process with special emphasis on computers and software systems. Included is an overview of system theory and structures, elements of the systems life cycle, risk and trade-off analyses, modeling and simulation, and the tools needed to analyze and support the systems process. Case studies from the information technology domain will be used to illustrate the systems engineering principles.

The capstone integrates and applies the major concepts presented in all other course work. Using casework methods, students will identify best practices and appropriate technologies to implement effective IT decisions aligned with organizational goals. Strong emphasis is placed on viewing information technology issues in a context of both day-to-day and strategic management decision making based on applied research. Issues include competitiveness, information architecture, user needs, process reengineering, value chain management, collaborative computing, globalization, social impact, information policy, and ethics. Emerging trends in information technology are analyzed to understand their potential effect on the workplace and society.

Executive Master of Science in Technology Management

Technology management encompasses all aspects of management associated with the identification, development, acquisition, and application of technologies for the production of goods and services. Such management is vital to both private-sector organizations, which must face the challenges associated with the fast pace of technological change, and the public sector, which has an integral and defining role in providing regulations and policy that will shape the future of U.S. technological competitiveness.

The Executive Master of Science in technology management program covers three important competency areas in a technology driven, globally competitive business environment: strategic management, systems management, and operations management. The executive program seminars are designed to introduce and develop these competencies, with one seminar focusing on each key area and a sixth, capstone seminar integrating the lessons and objectives of the previous five. This 36-credit program is completed in an 18-month period with face-to-face classes held every other Saturday to accommodate professional work schedules.

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Composition of the Executive Class

Each class is comprised of approximately 25 executives who progress through the program as a group. The organizational experience of the class members is vital to the learning experience and is further enhanced through a variety of teaching methods. Each participant is expected to actively participate, and the interaction afforded by the seminars is designed to significantly contribute to a broader understanding of organizational issues in increasingly technical settings.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

Participants are selected on the basis of the following criteria: a minimum of five years of business or management experience; a current position as a mid- or senior-level manager; a bachelor's degree from an accredited university or college in computer science, the physical sciences, engineering, or business; a GPA of 3.0 on a 4.0 scale for degree-seeking participants or at least a 2.5 GPA in the major area of study for provisional status; a personal interview with the program director; submission of the official transcript from the bachelor's-degree-granting institution; and a personal statement of goals and objectives. All participants must have access to a computer and the Internet and a working knowledge of software programs as described on page 38. The UMUC Graduate School reserves the right to request additional transcripts.

Required Library Research Skills Course

To ensure participants are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 or UCSP 610E Library Skills for the Information Age within their first 6 credits of study.

Application

A complete application consists of an application form; the official transcript from the bachelor's-degree-granting institution; a personal statement that indicates experience, current employment, and goals that may be fulfilled through participation in the program; and the application fee.

Fees

The fees for this program are those in effect at the time of publication and are subject to change. Information on tuition can be viewed at *www.umuc.edu/tuition*.

Neither tuition remission for University System of Maryland employees nor tuition remission under the Golden ID program may be used for the Executive Master of Science in technology management.

Locations

All classes in the Executive Master of Science in technology management program are held at the same location in the Washington, D.C. metropolitan area throughout the 18-month program. This location may be the UMUC Inn and Conference Center in Adelphi, MD, the USM Shady Grove Center in Rockville, MD, or another facility in northern VA or Washington, DC.

Prospective candidates should check the executive program Web site at *info.umuc.edu/executiveprograms* for the location of the next seminar.

Format

The Executive Master of Science in technology management is an accelerated 18-month program using the seminar format. Instructional methodologies include lectures, case studies, structured discussions, guest speakers, videos, computer exercises, written projects, and oral presentations. The classes are held every other Saturday from 8:30 a.m. to 5 p.m. and are supplemented with UMUC's online instruction to provide maximum flexibility and convenience.

The program consists of six, 6-credit seminars. Each seminar includes examinations, papers, and/or presentations. The end-of-program project is the capstone learning experience. The project provides participants with a unique opportunity to develop sound approaches to specific technology management issues.

Students are encouraged to bring laptop computers to class.

Seminar I

XTMN 601 6 credits

Technology Overview and Strategic Management

This first seminar provides program participants with the knowledge, skills, and techniques they need to develop and continuously evaluate appropriate business technology strategies for their organizations. This seminar starts with an overview of technology management as an academic discipline and a professional practice. This is followed by an introduction to strategic planning as an integrated part of a new technology-based product or service. The issues of competitive strategy, technology based organizations, and new product launches are presented. The processes of entrepreneurship and intrapreneurship are discussed from the standpoint of various organizational functions and levels and how these processes can be promoted through effective strategic management. Finally, using the principles and technology explored in Seminars I and II, program participants will create a business plan for a new venture introducing a new technology-based product or service.

Seminar II

XTMN 602 6 credits

Marketing and Financing Technology-Based Ventures

This seminar provides program participants with a study of the techniques of qualitative and quantitative market research and test marketing. The program participant is introduced to financial management for technology managers, including the preparation and analysis of a diverse set of financial statements and the valuations of capital and intellectual assets, intellectual property, and intangibles. The issues of pricing, customer service, market differentiation, and new product launches are presented. Finally, using the principles and technology explored in both Seminars I and II, program participants will create a business plan for a new venture introducing a unique technology-based product or

service. Each participant will then begin to develop the capstone project, a journal identifying the application of all of the material covered during the program to the venture created during this seminar. The capstone project will be submitted at the conclusion of Seminar VI.

Seminar III

XTMN 603 6 credits

Program and Operations Management

In the first module of this seminar, students will be introduced to the concepts, processes, and theory of project management. Students will develop a work breakdown structure, critical path, Gantt charts, and risk management plan for an identified activity. The final product of this activity will be the presentation of a project plan at the end of the module. In the second module, participants learn how to design and manage organizational systems that can effectively adapt to a rapidly changing, highly competitive, technology-driven environment. They learn how to use the systems approach to address complex organizational problems in a logical and structured manner. Topics covered include decision theory, linear programming, network analysis, and risk analysis. During this seminar, participants are introduced to software for program management, decision-support systems, and expert systems that will prove useful throughout this and following seminars to formulate and solve problems in technology management. Program participants will submit the first installment of their journals identifying the relevance of the content of Seminar III to the venture created at the conclusion of Seminar II.

Seminar IV

XTMN 604 6 credits

Electronic Commerce

The rapid growth of E-Commerce (EC) affects the way lines of business and every functional group are run within an enterprise. An introductory module provides an overview of both the strategic and the technical essentials of what managers need to know in order to manage and lead an EC initiative. Topics covered include definitions of EC, a brief history of EC, EC business models, and the role of technology. The economics of information goods, virtual value chains, and electronic markets are also presented. The impact of EC on organizational strategy and industry structure and an in-depth assessment of a successful EC strategy is presented. The discussion will also address the legal, social, ethical, regulatory and other emerging issues related to EC, electronic communities and virtual organizations. Program participants will be presented with an outline of the technologies that enable EC, including telecommunications technology trends, portals and search engines, Web site design and management, EDI and XML, electronic payment systems and security, Web access to databases, ERP and CRM software, and EC servers. Program participants will discuss the emergence of the Internet as one of the most significant forces to affect marketing since the emergence of mass media. This seminar delves into the technologies and potential applications of the Internet with a focus on developing effective global marketing strategies using the web as a medium. Web site development, attracting and managing Web site traffic, use of e-mail, Internet regulatory issues, and development of Internet marketing strategies are explored in depth. Program participants will submit the second installment of their journals identifying the relevance of the content of Seminar IV to the venture created at the conclusion of Seminar II.

Seminar V

XTMN 605 6 credits

Operational Performance and Human Resources

This seminar focuses on operational tools, techniques and methodologies to improve operational effectiveness and gain competitive advantage. Program participants learn operations methods and skills that are used for planning, control, and internal management. The needs of both internal and external customers are addressed using consistently high and continuously improving quality products and services. Methodologies to implement both functional and nonfunctional processes are discussed. Organizational culture, business ethics, and effective management strategies are introduced to foster an understanding of workplace behavior and motivation in technology-based organizations. Software for implementing process improvements and process management is introduced, and program participants develop competencies in applying this software to practical problems including their team-based technology business ventures. Program participants will submit the third installment of their journals identifying the relevance of the content of Seminar V to the venture created at the conclusion of Seminar II.

Seminar VI

XTMN 606 6 credits

Business Law and Global Management—Capstone

In this seminar, several topics are discussed in relation to the context of earlier seminars, including problem solving and decision making, legal considerations affecting responsible management with an emphasis on legal issues in the technology arena, and the problems and opportunities of competing in the international domain. In the Capstone activity, program participants will present the applications of material covered in the program to the original business ventures developed in Seminars I and II as described in their journals. Program participants will finalize the capstone exercise. Program participants will submit the final version of their journals identifying the relevance of the content of all studied material in the program to the venture created at the conclusion of Seminar II, on the actual workplace selected.

Dual Degrees in the Executive MBA Program

(See also Dual Degrees for the Online and Combination Online/Face-to-Face MBA)

Graduates of selected UMUC Masters programs (whether obtained through Executive format or through the standard program format) can also obtain a Master of Business Administration (MBA) degree through the accelerated format of Executive Programs. These dual degree students may earn two master's degrees for a total of 54 to 60 credits, rather than the 78 to 81 credits that would be needed if two master's programs were completed separately. Students must complete all degree requirements for the first master's program before they can earn an MBA. To obtain the MBA, students must then complete 18–24 additional credits from the Executive MBA program. The MBA dual degree option through Executive Programs is available to any graduate of the following UMUC programs: Master of Science in management, Master of International Management, or Master of Science in technology management.

All of the requirements for both degrees must be completed within 7 years. All MBA degree course work must be completed within 5 years.

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Dual Degree Program

Students who first complete an entire UMUC Masters program (36–42 credits) will be able to earn a second MBA degree by completing only 18–24 additional credits. Graduates of UMUC master's programs are eligible for admission to the Executive MBA program, regardless of whether their first degree was obtained in the Executive Program. Participants who wish to complete their first master's degree through Executive Programs must meet the eligibility requirements specified for that Executive Program.

See pages 164–174 for Executive Program descriptions.

Executive MBA graduates are eligible for dual degrees in the regular programs for Master of International Management (see page 61) and Master of Science in management (see page 116).

Program Format

The Executive MBA is offered in an accelerated format that combines face-to-face seminars with online study. Emphasis is placed on speaking and formal presentation skills in the face-to-face seminars and on writing and analytical skills in the online course work.

Required Library Research Skills Course

To ensure that participants are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All students must successfully complete UCSP 610 or UCSP 610E, Library Skills for the Information Age, within their first 7 credits of study.

Admission Requirements

The Graduate School does not require the Graduate Record Examinations (GRE) or the Graduate Management Admission Test (GMAT) for admission to this program.

The MBA dual degree option through Executive Programs is available to any graduate of the following UMUC programs:

- Master of Science in management
- Master of International Management
- Master of Science in technology management

Locations

Classes in the Executive MBA program are delivered through a combination of face-to-face Saturday seminars and online study. The Saturday seminars are offered at College Park and other locations in the Washington, D.C. area, including the Shady Grove center. Up-to-date schedules and course locations can be found at the following Web sites: *www.umuc.edu/prog/gsmt/gsmthome.html* or *info.umuc.edu/executiveprograms*.

Core Courses and Fees

Course descriptions and fees for all Executive MBA programs start on page 164.

Degree Status

Graduates of any of the above UMUC programs are admitted to the MBA program as dual degree seeking students.

Master of Science in Technology Management/Master of Business Administration (TMAN/MBA)

Students must first complete the entire Master of Science in technology management (TMAN) degree program (36 credits) and meet all the requirements for graduation. Upon application, students will be awarded a TMAN degree. The TMAN "alumni" can then earn an MBA degree (second actual degree document) by completing 18–24 hours in the Executive MBA program.

- Students who have completed the Executive Program TMAN degree will take these courses, which are 6 credits each (18 additional credits):
  - Seminar 602 (XMBA 602) Organizational Leadership, Management of Human Resources, and Business Ethics
  - Seminar 605 (XMBA 605) Financial Systems and Management Accounting
  - Seminar 606 (XMBA 606) International Business, Trade and Business Law

- Students who have completed the regular TMAN degree will take these courses, which are 6 credits each (24 additional credits):
  - Seminar 602 (XMBA 602) Organizational Leadership, Management of Human Resources, and Business Ethics
  - Seminar 603 (XMBA 603) Marketing, Entrepreneurship, and New Product Development
  - Seminar 605 (XMBA 605) Financial Systems and Management Accounting
  - Seminar 606 (XMBA 606) International Business, Trade and Business Law

Master of International Management/Master of Business Administration (MIM/MBA)

Students must first complete the entire Master of International Management (MIM) degree program (36–39 credits) and meet all the requirements for graduation. Upon application, students will be awarded an MIM. The MIM "alumni" can then earn an MBA degree (second actual degree document) by completing 18 hours in the Executive MBA program. The required MBA seminars will depend on the MIM specialty track, as follows:

- Students who have completed the Executive MIM program will take these three courses, which are 6 credits each:
  - — Seminar 603 (XMBA 603) Marketing, Entrepreneurship, and New Product Development
  - — Seminar 604 (XMBA 604) Technology and Operations Management
  - — Seminar 605 (XMBA 605) Financial Systems and Management Accounting

- Students who have completed the international commerce and international marketing tracks of the MIM will take these three courses, which are 6 credits each:
  - — Seminar 601 (XMBA 601) Overview of Management Theory, Strategic Thinking, and Global Management
  - — Seminar 604 (XMBA 604) Technology and Operations Management
  - — Seminar 605 (XMBA 605) Financial Systems and Management Accounting

- Students who complete the international finance track of the MIM will take these courses, which are 6 credits each:
  - — Seminar 601 (XMBA 601) Overview of Management Theory, Strategic Thinking, and Global Management
  - — Seminar 603 (XMBA 603) Marketing, Entrepreneurship, and New Product Development
  - — Seminar 604 (XMBA 604) Technology and Operations Management

Master of Science in Management/ Master of Business Administration (MSM/MBA)

Students must first complete the entire Master of Science in management (MSM) degree program (36–39 credits) and meet all the requirements for graduation. Upon application, students will be awarded an MSM. The MSM "alumni" can then earn an MBA degree (second actual degree document) by completing 18 hours in the Executive MBA program. The required MBA seminars will depend on the MSM specialty track, as follows:

- Students who have completed the Executive MSM program or the marketing track of the MSM will take these courses, which are 6 credits each:
  - — Seminar 604 (XMBA 604) Technology and Operations Management
  - — Seminar 605 (XMBA 605) Financial Systems and Management Accounting
  - — Seminar 606 (XMBA 606) International Business, Trade and Business Law

- Students who have completed the finance track of the MSM will take these courses, which are 6 credits each:
  - — Seminar 603 (XMBA 603) Marketing and Entrepreneurship
  - — Seminar 604 (XMBA 604) Technology and Operations Management
  - — Seminar 606 (XMBA 606) International Business, Trade and Business Law

Certificate Programs

UMUC offers more than 30 graduate certificate programs in these fields: the Executive Program, Distance Education, Electronic Commerce, General Management, International Management, Information Technology Systems, Biotechnology Studies, and Technology and Environmental Management. Each certificate will range from 12 to 24 credits. The certificates are the ideal credential for individuals who do not wish to pursue a full master's degree or for those who already have one or more advanced degrees and wish to add to their credentials in their field. All of the courses in each certificate program earn full graduate credits that can be applied toward the master's degree. Students have 3 years to complete any certificate which is 18 credits or less and 5 years to complete any certificate above 18 credits.

Admission Requirements

Admission requirements for certificate students are the same as those for degree-seeking students. Specific admission requirements for areas of specialization may be found under the relevant degree program. It is strongly recommended that certificate students seek the advice of the appropriate program advisor before registering to help ensure readiness for selected courses.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. All graduate students must successfully complete UCSP 610 or UCSP 610E Library Skills for the Information Age within their first 9 credits of study.

Executive Program

The Executive Programs offer a combination of online and face-to-face instruction.

Staff

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Chief Information Officer — 24 credits

This 12-month executive program is offered in partnership with the General Services Administration's CIO University. Participants, high-performing GS/GM 14, GS/GM 15, or private-sector equivalents, will receive both a federal government and UMUC CIO Certificate. In addition, credits earned in this program may be applied toward a master's degree. The CIO Certificate program encompasses all competencies cited in the Information Technology Management and Reform Act (Clinger-Cohen) and identified by the federal CIO Council. These are all areas of management associated with the design, development, acquisition, implementation, planning, and maintenance of

an organization's information technology structure. Seminars are 6 credits each.

- XMIT 601 IT and the Industry and Strategic Management
- XMIT 602 Human Resources, Leadership, and Project/Financial Management
- XMIT 603 Advanced Topics in IT and Systems Security and Risk Management
- XCIO 693 CIO Processes

This program is designed for:

- Chief Information Officers and Chief Technology Officers
- Senior Information Technology staff members and planners
- Consultants in the field of information technology

Strategic Management of Technology and Innovation — 12 credits

This 6-month certificate is designed to provide participants with the critical skills needed to craft an integrated technology and business strategy plan for their organizations. The seminar develops the principles, implications, and role of technology innovation in organizational development and global competition. It builds skills in corporate creativity and innovation, technology planning, capital finance and budgeting, marketing, and strategic management. Important, cutting-edge management techniques for business leaders are covered including activity-based costing, e-commerce, knowledge management, flexible product development, and the balanced scorecard. The certificate is designed for managers in both private and public sector organizations who wish to acquire the necessary skills and business expertise to identify ways to strategically improve their organizations' performance and global competitiveness. All 12 credits in this certificate may be applied toward the degree of Master of Science in technology management.

- XTMN 601 Technology Overview and Strategic Management
- XTMN 602 Marketing and Financing Technology-Based Ventures

This program is designed for:

- CEOs, CFOs, directors, and general managers responsible for setting the vision and strategic objectives of their organizations
- Mid- to senior-level executives involved in the identification, development, and deployment of new technologies to gain strategic advantage
- Entrepreneurs and business development professionals interested in private and corporate venturing.

Accounting and Financial Management Program

Accounting and Financial Management—Operations — 12 credits

This certificate emphasizes an understanding of accounting and financial-reporting processes and how this information can be used to improve financial operating efficiency and measure managerial performance.

- ACCT 609 E-Commerce Accounting
- ACCT 610 Financial Accounting
- ADMN 631 Financial Management in Organizations
- ADMN 632 Financial Management of Current Operations

Accounting and Financial Management—Strategic — 15 credits

This certificate focuses on how accounting and financial information can be used and analyzed to make better organizational strategic decisions. The vision of accountants as information providers has particular appeal to those who see accounting as useful in corporate decision making and management.

- ACCT 611 Management Accounting

- ACCT 614 Accounting Information Systems
- ADMN 631 Financial Management in Organizations
- ADMN 633 Long Term Financing of Organizations
- ADMN 634 Financial Markets and Investments

Biotechnology Management Program

Biotechnology Management — 15 credits

The certificate program in Biotechnology Management is designed to provide the student with a solid foundation in the technical, business, and ethical issues facing the industry today. The certificate program requires the following five core courses:

- BIOT 640 Social and Ethical Issues
- BIOT 641 Commercialization of Biotechnology
- BIOT 643 The Techniques of Biotechnology
- BIOT 644 The Regulatory Environment of Biotechnology
- BIOT 646 Bioinformatics

Distance Education Program

The online graduate Distance Education certificates are designed to provide education and training professionals with a core set of knowledge and skills to help them manage the distance education enterprise. The certificates are the ideal credential for individuals who do not wish to pursue a full master's degree or for those who already have one or more advanced degrees and wish to add to their credentials in the distance education field. All the courses in each certificate program earn full graduate credits that can be applied toward the Master of Distance Education degree.

Distance Education in Developing Countries — 12 credits

The certificate in Distance Education/Developing Countries is a certificate program within the MDE program offered by UMUC and Oldenburg. It consists of four online courses: Foundations of Distance Education, Economics of Distance Education, National and International Policies for Distance Education, and Technologies for Distance Education in Developing Countries. It will examine the purposes for which distance education has been used and the audiences reached in developing countries. It allows the student to explore organizational models for distance education at various educational levels. It will analyze the roles played by international agencies. It will enable the student to evaluate the range of educational technologies that assist institutions in reaching various off-campus audiences. It will explore the changing role of the private sector, the role of conventional universities in relation to e-learning, and the new international players.

- OMDE 601 Foundations of Distance Education
- OMDE 606 The Economics of Distance Education
- OMDE 625 National and International Policies for Distance Education
- OMDE 626 Technologies for Distance Education in Developing Countries

Distance Education & Technology — 12 credits

The certificate in Distance Education (Technology) is intended for people seeking to exercise some managerial responsibility over the distance education technology-based functions in their organizations. It is particularly helpful for people who already have an advanced degree, but who need to be updated and/or introduced to the field. The certificate is intended to place the study of contemporary educational technologies in the context of the goals of educational and training organizations and to provide the students with some in-depth knowledge and experience with the primary distance technologies in use today.

- OMDE 601 Foundations of Distance Education
- OMDE 603 Technology in Distance Education

Two of the following:

- OMDE 605 New and Emerging Media in Distance Education

- OMDE 623 Web-Based Learning and Teaching and the Virtual University
- OMDE 631 Advanced Technology in Distance Education 1—Synchronous Systems
- OMDE 632 Advanced Technology in Distance Education 2—Asynchronous Systems
- OMDE 633 Information Technology and Distance Education

Foundations of Distance Education 12 credits

The certificate in Distance Education (Foundations) is intended for people seeking to exercise some managerial responsibility over the distance education functions in their organizations. It is particularly helpful for people who already have an advanced degree, but who need to be updated and/or introduced to the field. The certificate is intended to represent the study of the four basic foundational aspects of the field of distance education: history and theory, media and technology, economics, and support of the student.

- OMDE 601 Foundations of Distance Education
- OMDE 605 New and Emerging Media in Distance Education
- OMDE 606 Economics of Distance Education
- OMDE 624 Student Support in Distance Education

Library Services in Distance Education 12 credits

The certificate in Distance Education (Library Services) is intended for people seeking to exercise some managerial responsibility over the delivery of distance education library services functions in their organizations. It is particularly helpful for people who already have an advanced degree, but need to be updated and/or introduced to the field. The certificate will provide in-depth information in the history, theory, and organization structure of distance education, and the role of library services within those organizations. Emphasis will be placed on the selection and application of appropriate technologies, particularly with reference to library services.

- OMDE 601 Foundations of Distance Education
- OMDE 603 Technology in Distance Education
- OMDE 611 Issues in the Delivery of Library Services to Distance Students

One elective from the Master of Distance Education program

Teaching at a Distance 12 credits

The certificate in Distance Education (Teaching at a Distance) is intended for people seeking to teach via distance in their organizations. It is particularly helpful for people who already have an advanced degree, but who need to be updated and/or develop skills related to distance teaching. The certificate is intended to provide the student with teaching and learning concepts and teaching skills and methods that are appropriate to a distance education and training context.

- OMDE 601 Foundations of Distance Education
- OMDE 603 Technology in Distance Education
- OMDE 607 Instructional Design and Course Development in Distance Education
- OMDE 623 Web-Based Learning and Teaching and the Virtual University

Training at a Distance 12 credits

The certificate in Distance Education (Training) is intended for people seeking to exercise some managerial responsibility over the distance training functions in their organizations. It is particularly helpful for people who already have an advanced degree but who need to be updated and/or introduced to the field. The certificate is intended to provide the student with a broad range of knowledge about and skills in the application of distance education and training within business, industry, government, and nonprofit organizations.

- OMDE 601 Foundations of Distance Education
- OMDE 621 Training at a Distance

- OMDE 622 The Business of Distance Education

One elective from the Master of Distance Education Program.

E-Commerce

Electronic Commerce — 15 credits

The certificate in Electronic Commerce introduces participants to the critical competencies and skills needed to effectively identify, develop, and implement e-commerce business strategies in various types of organizations.

- ECOM 610 Introduction to E-Commerce
- ECOM 620 E-Marketing
- ECOM 630 Information Risk Assessment and Security Management
- ECOM 650 E-Commerce Applications and Operations
- ECOM 660 E-Commerce Financial Management and Accounting

General Management Program

The following General Management certificates have been discontinued, and new students will not be admitted to these certificate programs: Foundations of Health Care Administration, Principles and Practices of Health Care Administration, and Governance, Resource, and Volunteer Management. Currently enrolled students will have the opportunity to complete the certificate requirements and should continue to enroll in courses as outlined by the certificate program when they first enrolled. Please forward any questions about the certificates to the General Management Department.

Accounting — 12 credits

The certificate in Accounting is designed to broaden and deepen the accounting knowledge of practicing professionals. As accountants become cost consultants and systems design partners in an information-technology- and e-commerce-based environment, participants will be prepared to respond to the changing role of accountants in modern organizations.

- ACCT 609 E-Commerce for Accountants
- ACCT 610 Financial Accounting
- ACCT 611 Management Accounting
- ACCT 614 Accounting Information Systems

Financial Management in Organizations — 15 credits

The certificate in Financial Management in Organizations is intended for people seeking to exercise managerial responsibilities over the financial functions of their organizations. It is also helpful to general managers who wish to strengthen their knowledge of and skills in the financial management of their organizations.

- ADMN 631 Financial Management in Organizations
- ADMN 632 Financial Management of Current Operations
- ADMN 633 Long-Term Financing of Organizations
- ADMN 634 Financial Markets and Investments
- ADMN 639 Multinational Financial Management
- ADMN 655 Strategic Financial Management

Note: The courses for this certificate program are sequenced. Students should take the courses in the following order:

- ADMN 631
- ADMN 634

Select two courses from the following: ADMN 632, ADMN 633, ADMN 639

- Fifth and final class: ADMN 655

Foundations for Human Resource Management — 12 credits

The certificate in Foundations for Human Resource Management is designed to serve as an introduction for managers who want a better understanding of the human resource management (HRM) function. It reviews fundamental principles of organizational behavior, the scope of human resource management issues, and basic legal frameworks involved in managing people. Line managers, as well as those interested in pursuing a career in HRM, will find the information practical.

- ADMN 625 Organizational Communication and Group Development
- ADMN 661 Employee Relations
- ADMN 662 Issues and Practices in Human Resource Management
- ADMN 664 Organizational Development and Change

Health Care Administration — 18 credits

The certificate in Health Care Administration is geared toward those professionals who want a specialization in health care administration but who do not desire a full MSM degree. The six courses selected by the certificate student represent the full spectrum of updated health care administration.

- HCAD 610 Information Technology for Health Care Administration
- HCAD 620 The U.S. Health Care System
- HCAD 630 Public Health Administration
- HCAD 640 Financial Management for Health Care Organizations
- HCAD 650 Legal Aspects of Health Care Administration
- HCAD 660 Health Care Institutional Organization and Management
- HCAD 670 Long Term Care Administration
- HCAD 680 Special Topics in Health Care Administration

Note: Students are required to take HCAD 620, HCAD 650, and HCAD 660. The student can then select any three of the remaining four courses to complete the certificate.

Integrated Direct Marketing — 12 credits

The certificate in Integrated Direct Marketing prepares students to design, develop, test, implement, and measure the deployment of multiple media and sales channels (for example, publicity and public relations, advertising, direct mail, interactive marketing, telemarketing, and field sales).

- ADMN 686 Marketing Management
- ADMN 638 Research Methods for Managers
- ADMN 688 Marketing Intelligence and Research Systems
- ADMN 689 Integrated Direct Marketing

Integrative Supply Chain Management — 12 credits

The certificate in Integrative Supply Chain Management is designed to familiarize participants with in-depth strategies and procedures related to integrative supply chain management. Major topics include aspects of e-commerce, logistics, supply and distribution chains, pricing, negotiations, and statistical manipulation of databases for more efficient procurements.

- ADMN 622 Supply Chain Management
- ADMN 623 Contemporary Logistics
- ADMN 628 Pricing and Negotiations
- ADMN 638 Research Methods for Managers

Leadership and Management — 15 credits

The Leadership and Management certificate provides students with an overview of leadership and group development theory and research. The curriculum focuses on

decision making, and conflict and change management, communication, and approaches to leadership. Additionally, the curriculum allows students the opportunity to explore related topics in e-commerce, human resources, not-for-profit management, or financial management in technology.

Not-for-Profit Financial Management 12 credits

The certificate in Not-for-Profit Management provides nonprofit managers and professionals with the fundamentals of financial management, including the theory and practice of financial management with application to nonprofit management. The certificate also provides a framework for financial management within the context of overall non-profit strategic management.

- ADMN 631 Management in Organizations
- ADMN 633 Long Term Financing of Organizations
- ADMN 654 Not-for-Profit Financial Management
- ADMN 659 Strategic Management in Not-for-Profit Organizations

Procurement & Contract Management 15 credits

The certificate in Procurement and Contract Management is designed to familiarize participants with the broad concepts and strategies of procurement and contract management. The course of study includes the following major topics: foundations of pricing and negotiations, basic aspects of contracting, procurement of services and products, aspects of commercial transactions, logistics, and materials management.

- ADMN 626 Purchasing and Materials Management
- ADMN 627 Legal Aspects of Contracting
- ADMN 628 Contract Pricing and Negotiation
- ADMN 629 Strategic Purchasing and Logistics
- ADMN 660 Commercial Transactions in a Technological Environment: Law, Management & Technology

Systems Analysis 12 credits

In the development of an information system, early attention must be given to tasks such as problem definition, systems analysis, requirements definition, and logical design. The certificate in Systems Analysis is designed to prepare students to undertake these early tasks. In addition to providing a technical foundation, the certificate program provides education on managerial uses of information systems, the software development life cycle, and systems analysis and design.

- ADMN 640 Information Systems for Managers

Or any CSMN/TLMN course

- ADMN 641 Information Systems Management and Integration
- ADMN 643 Systems Analysis and Design
- ADMN 644 Information Technology, the CIO, and Organizational Transformation

Information Technology Systems Program

The following eight certificates provide the technical and quasi-technical foundations for knowledge workers in the fields of software development management, database systems technologies, information assurance, information resources management, applied computer systems, software engineering, and telecommunications.

(Note: Federal workers participating in the 1000 By the Year 2000 Program and its successor must take a total of six courses [18 credits] by adding one additional elective to the certificates listed in this section.)

Applied Computer Systems 15 credits

The certificate in Applied Computer Systems is intended for information technology (IT) professionals who desire a background in the underlying computer hardware, operating systems, and languages that are the building blocks of information systems. This is a technically oriented certificate and has a prerequisite of at least one semester of undergraduate calculus. Familiarity with a high level program-

ming language is desirable. All courses apply to the CSMN degree.

- CSMN 601 Issues, Trends, and Strategies for Computer Systems Management

Three of the following:

- CSMN 615 Hardware and Operating Systems
- CSMN 616 Distributed Computing
- CSMN 617 Principles of Programming Languages
- CSMN 618 Knowledge-Based Systems

One elective from CSMN, TLMN, or TMAN

Database Systems Technologies 15 credits

The certificate in Database Systems Technologies is designed for IT professionals and technical leaders who are preparing to work with database systems. Students will develop a solid foundation for relational database systems. Through this program, students will also study object-relational and object-oriented databases. Some laboratory work is required.

- CSMN 661 Relational Database Systems
- CSMN 662 Advanced Relational/Object-Relational Database Systems
- CSMN 664 Object-Oriented Database Systems
- CSMN 655 Data Warehouse Technologies
- CSMN 656 Database Systems Administration

One elective from CSMN, TLMN, or TMAN

Information Assurance 15 credits

The certificate in Information Assurance deals with theory and topical issues, both technical and managerial, in the fields of information systems security and overall information security. The track provides a thorough knowledge base for managers and technology professionals concerned with the development and operation of secure information systems and with the protection of an organization's

information assets. The certificate provides students with a practical understanding of the principles of data protection, network security, and computer forensics. It also introduces the students to the policy, ethical, and legal issues associated with information security.

- CSMN 655 Information Risk Assessment and Security Management
- CSMN 681 Cryptology and Data Protection
- CSMN 683 Intrusion Detection, Incidence Response, and Computer Forensics
- CSMN 685 Security Policy, Ethics, and the Legal Environment
- TLMN 672 Network and Internet Security

Information Resources Management 15 credits

The certificate in Information Resources Management represents the most general certificate in the Information Technology Systems area. Course content includes exposure to the most common challenges faced by the IT generalist in the public or private sector. This certificate is particularly desirable for persons with limited formal study or little work experience in the IT field. All courses apply to the CSMN degree.

- CSMN 601 Issues, Trends, and Strategies for Computer Systems Management
- CSMN 635 Systems Development and Project Control
- CSMN 636 Telecommunications and Connectivity
- CSMN 637 Acquisition of Information Technology

One elective from ADMN 644 or ADMN 645, CSMN, TLMN, or TMAN.

Information Technology 15 credits

The certificate in Information Technology is intended for those students interested in a technical curriculum that covers a broad range of information technology topics. The certificate addresses computer science, telecommunication, and engineering principals. Students entering this certificate program must meet all the requirements for admission to the Master of Science in information technology. All courses apply toward the MSIT degree.

- MSIT 610 Foundations of Information Technology

Four of the following:

- MSIT 620 Computer Concepts
- MSIT 630 Concepts in Software-Intensive Systems
- MSIT 640 Data Communications and Networks
- MSIT 650 Systems Engineering
- MSIT 660 Internet Technologies

Software Development Management 15 credits

The certificate in Software Development Management provides technical managers and computer professionals with the technical foundations and management insights needed to participate in and manage phases of the software/systems life cycle. The emphasis is not on learning to write software programs, but on managing the process of software development. Familiarity with a high-level programming language is desirable. All courses apply to the CSMN degree.

- CSMN 601 Issues, Trends, and Strategies for Computer Systems Management

Three of the following:

- MSWE 603 Software Engineering
- MSWE 635 Software System Development
- MSWE 645 System and Software Standards and Requirements
- MSWE 646 Software Design and Implementation
- MSWE 647 Software Verification and Validation
- MSWE 648 Software Maintenance

One elective from CSMN, TLMN, or TMAN

Software Engineering 15 credits

The certificate in Software Engineering is intended for those students interested in the foundation and issues of software engineering. The certificate addresses software development and design issues. After completing the Software Engineering certificate, the student will be able to identify key issues and trends in the software engineering industry; manage key phases of the software life cycle; define software requirements, identify conceptual design, develop detailed design, verify, and validate the software product; and prescribe procedures for maintenance of the software applications.

Students entering this certificate must meet all of the requirements for admission to the Master of Science in Software Engineering. All courses apply toward the MSWE degree.

- MSWE 601 Issues in Software Engineering

At least three of the following:

Recommended for those working in the “front-end” of the life cycle

- MSWE 603 Systems Engineering

- MSWE 635 Software Systems Development
- MSWE 645 Systems and Software Standards and Requirements

Recommended for those working in the "back-end" of the life cycle

- MSWE 646 Software Design and Implementation
- MSWE 647 Software Verification and Validation
- MSWE 648 Software Maintenance

Plus, one elective from the MSWE program if only three have been selected above.

Telecommunications Management 15 credits

The certificate in Telecommunications Management gives the technical manager of IT professionals the technical and management skills needed to plan, acquire, operate, evaluate, and upgrade telecommunication systems in an environment of IT convergence and constant change. One semester of undergraduate calculus and one semester of statistics are prerequisite for this certificate. All courses apply toward the TLMN degree.

- TLMN 602 Telecommunications Industry: Structure and Environment
- TLMN 641 Network Management and Design
- ITSM 637 Information Technology Acquisition Management
- TLMN 655 Systems Integration for Telecommunications Managers

One of the following:

- TLMN 610 Data-Communications Systems
- TLMN 620 Local Area Networking Systems
- TLMN 625 Wide Area Networking Systems
- TLMN 630 Satellite Communications System
- TLMN 636 Internet Principals and Applications
- TLMN 645 Wireless Telecommunications Systems

International Management Program

International Marketing 12 credits

The certificate in International Marketing explores the marketing issues that are encountered when entering foreign markets such as cultural differences, market access barriers, market research, and market entry strategies. The first course taken should be IMAN 640 and the remaining courses may be taken in any order. The certificate is intended for U.S. company managers who seek to market goods and services outside the United States.

- IMAN 625 International Trade and Policy
- IMAN 620 International Marketing Research and Analysis
- IMAN 640 International Marketing Management

One of the following:

- IMAN 661 Area Studies: Business Strategies for Europe
- ADMN 687 Market Segmentation & Penetration
- ADMN 689 Integrated Direct Marketing

International Trade 12 credits

The certificate in International Trade prepares managers to identify and take advantage of global business opportunities. Topics such as global business strategies, strategic alliances, the World Trade Organization, and government relations are explored and applied to business situations. The first course taken should be IMAN 601 followed by IMAN 615. The remaining courses may be taken in any order. The certificate is intended for managers who want to learn the principles and techniques of international business and how to apply them to real business situations.

- IMAN 601 Strategic Management in a Global Environment

- IMAN 615 Foreign Investment and Strategic Alliances
- IMAN 625 International Trade and Policy

One of the following:

- IMAN 635 Managing Country Risk
- IMAN 640 International Marketing Management
- IMAN 645 The International Legal and Tax Environment

Technology and Environmental Management Program

Energy Resources Management and Policy Development — 15 credits

This certificate provides knowledge of the technologies, economics, management and policy dimensions of energy systems. The certificate has three major emphases, energy and resources, economics, and environment.

- ENVM 646 Environmental Law and Policy Development
- ENER 601 Energy Resources
- ENER 602 Energy Economics
- ENER 603 Energy Infrastructure Management
- ENER 604 New Technologies in Energy Management

Environmental Management — 15 credits

The certificate in Environmental Management is intended for people seeking to improve their abilities in managing environmental projects and programs. It is particularly helpful to relatively new environmental managers who wish to strengthen skills in working with a diverse group of environmental professionals.

- ENVM 646 Environmental/Energy Law and Policy Development
- ENVM 643 Environmental Communication and Reporting
- ENVM 647 Environmental Risk Assessment
- ENVM 644 New Technologies in Environmental Management
- ENVM 641 Environmental Auditing

Technology Systems Management — 18 credits

The certificate in Technology Management is available for students who are interested in the management of technology systems, but are not interested in pursuing the full degree program. The design, development, or acquisition of modern complex systems requires skills and background in both technical and management topics. The certificate program provides the basic systems management approach. The certificate program requires the following 6 core courses:

- TMAN 611 Principles of Technology Management
- TMAN 612 Financial Management for Technology Managers
- TMAN 614 Strategic Management of Technology and Innovation
- TMAN 621 Systems Analysis and Operations Research
- TMAN 622 Systems Development, Acquisition, and Management
- TMAN 632 Organizational Performance Management

Noncredit Programs

General Information

The Graduate School offers a complement of online noncredit courses designed to provide students with the skills and knowledge they need to complete their academic programs successfully.

Although these courses carry no UMUC credits, they will appear on UMUC students' official academic transcripts. At the conclusion of the course, a grade of "P" (Pass) will be posted.

Note: Financial aid, the Golden ID program, and USM remission of fees may not be applied to noncredit courses.

Current information about the Graduate School's noncredit courses is available at *www.umuc.edu/grad/noncred.html*.

Noncredit Registration Instructions

UMUC graduate students must be admitted or have an application on file before registering for noncredit courses. UMUC offers five ways to register: by phone through IRIS, by mail, by fax, online, or in person. For help with the registration process, students should visit the Graduate School Registration page at *www.umuc.edu/grad/reg.html* or contact the office of Graduate Student Affairs via e-mail at *gradinfo@umuc.edu* or 301-985-7155 or 800-888-UMUC.

Note: No refunds will be given to non-UMUC participants after the official start date of class.

Course Descriptions and Tuition Information

UCSP 600

Graduate Writing Workshop

This workshop provides a review of the grammatical, stylistic, and critical tools needed for effective academic writing. Weekly editing and writing assignments, as well as conference participation, are required. Among the module topics are grammar, diction, effective sentences, audience analysis, treatment and integration of references from the scholarly literature, and critical thinking.

Note: This workshop is not intended to be an English as a Second Language (ESL) course. Typically, ESL students require specialized assistance. ESL students may benefit more from enrolling in an English or a communications course designed specifically to address ESL issues. ESL courses are widely available at most community or junior colleges.

Faculty may advise that students enroll in the Writing Workshop to further develop the skills needed to ensure a successful education experience.

Workshop Length:	8 weeks
UMUC Graduate Student Tuition:	$225
Continuing Education Units (CEUs): (awarded upon workshop completion)	3

UCSP 610

Library Skills for the Information Age

This course is designed to familiarize students with electronic library and information resources. The significant

changes in how information is delivered make information retrieval and research an exciting challenge. This course provides an in-depth introduction to the library research process and the tools necessary to be effective in the Graduate School. Students learn to efficiently and effectively use a variety of electronic retrieval systems including the online catalog of the University System of Maryland, subscription databases, and the Web.

Note: This course is required for all new graduate students and all inactive students who reapply for admission (students enrolled in the Doctor of Management program are not required to take this course). It must be completed within the first 6 credits of graduate study.

This online course is a self-paced tutorial and can be completed on the student's own schedule anytime before its end date (it is not a 15-week class). It consists of seven modules with exercises and quizzes. The purpose of the course is to alert students to the many resources, databases, and research opportunities that are now available online. The Graduate School and Information and Library Services are proud to offer this material, which is critical for 21st century leaders.

Course Length: Self-paced tutorial, ongoing registration
Course Dates:

Spring:	January 1 through May 31
Summer:	June 1 through August 25
Fall:	August 26 through December 31
UMUC Graduate Student Tuition:	$75

(This fee is for program administration and technological support.)
No Continuing Education Units (CEUs)

UCSP 620

Financial Accounting

Financial accounting is an information system built upon a set of fundamental concepts. Its primary purpose is to help both current and potential investors value a company's debt and equity securities, that is, its bonds and common stock. This course is designed for people with no prior coursework in financial accounting. It encompasses basic financial concepts and their use in analyzing financial statements. Students analyze financial statements of actual companies and explore the process by which accounting principles are developed. Students develop a fundamental appreciation for how financial accounting information can be used to evaluate the economic performance of companies.

Note: Students without a background in accounting and finance are strongly advised to complete this course before enrolling in ADMN 630 or ADMN 631.

Course Length:	8 weeks
UMUC Graduate Student Tuition:	$225
Continuing Education Units (CEUs):	3

(awarded upon course completion)

UCSP 621

Economics

This course covers both the microeconomic issues of supply and demand for individual companies and products and macroeconomic issues concerning inflation, unemployment, and recession for the economy as a whole. Basic economic concepts such as opportunity cost, comparative advantage, economic efficiency, and the time value of money are explored in the context of business, government, and personal situations.

Note: Students without a background in accounting and finance are strongly advised to complete this course before enrolling in ADMN 630 or ADMN 631.

Course Length:	8 weeks
UMUC Graduate Student Tuition:	$225
Continuing Education Units (CEUs):	3

(awarded upon course completion)

UCSP 630

Introduction to Research Methods

This course presents basic research techniques and methodologies used in organizational research and evaluation studies. The information from these studies is used in making business decisions. Emphasis is also placed on preparing the student to evaluate and use research-based information developed by other individuals. The focus of the course is on applying basic research techniques to assess the performance of individuals, work groups, and organizations. Areas of coverage include principles of good data collection, presentation of data in tables and charts, summary and description of numerical data, basic probability and discrete estimation, the fundamentals of hypothesis testing, and the use of existing research-based materials to solve business problems. UCSP 630 provides students with basic approaches and beginning skills necessary to evaluate research materials and their use in business decision making.

Note: Students without a background in statistics are strongly advised to complete this course before enrolling in ADMN 638.

Course Length:	8 weeks
UMUC Graduate Student Tuition:	$225
Continuing Education Units (CEUs): (awarded upon course completion)	3

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