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UMUC is also certified by the State Council for Higher Education in Virginia.

NONDISCRIMINATION

UMUC welcomes applications from prospective students and employees regardless of race, religion, political affiliation, color, creed, gender, marital status, age, veteran status, mental or physical disability, or sexual orientation.

GENERAL GRADUATE SCHOOL INFORMATION

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

PROGRAM OVERVIEW ..........................................................2
MESSAGE FROM THE DEAN .............................................3
INTRODUCTION TO UNIVERSITY OF MARYLAND UNIVERSITY COLLEGE .........................................4
THE GRADUATE SCHOOL ..................................................8
ADMISSION AND ENROLLMENT .....................................11
SERVICES AND RESOURCES ..........................................17
ACADEMIC AND ADMINISTRATIVE REQUIREMENTS ............25
ONLINE STUDY ..............................................................31

GRADUATE PROGRAMS AND REQUIREMENTS
  Graduate Study ..............................................................32
  Doctor of Management Program ......................................34
  Master's Degree Programs ..............................................37
  Dual Degree Programs ..................................................80
  Executive Degree Programs ..........................................92
  Executive Dual Degree Programs .....................................95
  Certificate Programs ....................................................97
  Resident Teacher Certification Program ..........................108

INFORMATION ON COURSES ........................................110

UNIVERSITY POLICIES ..................................................157

ADMINISTRATION .......................................................166

FACULTY .................................................................171

INDEX ........................................................................193

ADMISSION FORM ....................................................Back of Book
Program Overview

Doctor of Management
• International operations
• Organizational processes
• Technology and information systems

Master of Arts in Teaching

Master of Business Administration

Master of Distance Education (available online only)

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 technologies
• Information assurance
• Information resources management
• Software development management

Master of Science in e-commerce (available online only)

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
• Project management
• Public relations

Master of Science in technology management
• Energy resources management and policy
• General program
• Project management
• Technology systems management

Master of Science in telecommunications management

Master of Software Engineering

Executive Programs
• Master of Business Administration
• Master of Science in information technology
• Master of Science in technology management

Dual Degree Programs
• Master of International Management/
  Master of Business Administration
• Master of Science in accounting and financial management/
  Master of Science in management
• Master of Science in accounting and information technology/
  Master of Science in management

Executive Dual Degree Programs
• Master of Science in e-commerce/Master of Business Administration
• Master of Science in health care administration/Master of Business Administration
• Master of Science in management/Master of Business Administration

Certificate Programs
Distance Education
• Distance Education and Technology
• Distance Education in Developing Countries
• Foundations of Distance Education
• Library Services in Distance Education
• Teaching at a Distance
• Training at a Distance

E-Commerce
• Electronic Commerce

General Management
• Accounting
• Accounting and Financial Management—Operations
• Accounting and Financial Management—Strategic
• Accounting and Information Systems
• Accounting and Information Technology
• Financial Management in Organizations
• Foundations for Human Resource Management
• Health Care Administration
• Integrated Direct Marketing
• Integrative Supply Chain Management
• Leadership and Management
• Not-for-Profit Financial Management
• Procurement and Contract Management
• Public Relations
• Systems Analysis

Information Technology Systems
• Applied Computer Systems
• Database Systems Technologies
• Information Assurance
• Information Resources Management
• Information Technology
• Software Development Management
• Software Engineering
• Telecommunications Management

International Management
• International Marketing
• International Trade

Management of Technological Systems
• Biotechnology Management
• Energy Resources Management and Policy
• Environmental Management
• Project management
• Technology Systems Management

Executive Program
• Chief Information Officers (CIO)
• Strategic Management of Technology and Innovation

Resident Teacher Certification Program
Welcome to the 2003–4 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 offers the Doctor of Management, 17 master’s degrees, and more than 35 graduate certificates. All of our master’s degree and certificate programs are available online, and many are also available in classroom or combined delivery formats.

We have designed our graduate programs to maximize accessibility for our students who live and travel around the world while completing their coursework. Currently, all of our master’s degrees are offered online, and many are also available in a classroom-based format at various sites throughout Maryland. Three of our master’s degree programs are offered in executive format for students who prefer a compressed program that combines online and on-site study.

As current or potential graduate students at UMUC, it is important for you to know that we are committed to excellence in our curriculum and instruction. We expect no less of our busy, employed, adult students than is expected by all high-quality graduate programs. As is true in our 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, PhD
Vice Provost and Dean, Graduate School
Vision

University of Maryland University College (UMUC) is a visionary institution, on the forefront of education for the 21st-century workforce. It is an entrepreneurial and creative institution, committed to the exploration of knowledge, the construction of partnerships, and innovative academic delivery. It is a large and diverse institution, serving 82,000 students around the world. It is a substantive institution, committed to lifelong learning and education of adults in the workforce.

History and Scope

UMUC has fulfilled its principal mission of providing higher education opportunities to adult, part-time students for more than 50 years. Founded in 1947 as the College of Special and Continuation Studies, UMUC has grown to become one of the largest institutions in the University System of Maryland—both in terms of enrollments and its global scope—while earning accolades for the quality of its programs and its innovative use of technology.

Almost from its inception, UMUC looked beyond state boundaries to bring courses to U.S. servicemembers in Europe (since 1949) and Asia (since 1956). Today, UMUC continues to provide courses at more than 160 military installations throughout Europe and Asia through long-standing partnerships with overseas military commands. UMUC also makes it possible for students anywhere to attend class via the Internet.

UMUC offers degree programs from the associate of arts through the doctor of management, undergraduate and graduate certificates, an accelerated route to teacher certification in Maryland, and noncredit leadership development programs that respond to the needs of the lifelong learner.

Throughout all the university’s many programs, certain features stand out: UMUC’s commitment to serving adult students, academic quality, its active presence throughout the state of Maryland, its international scope as a global university, and its long partnership with the U.S. military.

Commitment to Adult Students

UMUC recognizes that adult students have many demands on their time and must balance studies with work and family responsibilities. To help them accomplish their education goals, UMUC provides a number of convenient and flexible options for both coursework and student services. Classroom-based courses are offered at times convenient for working adults at locations near where they live and work, while online courses may be accessed from anywhere at anytime. Most student services are available by phone or online, as well as at many UMUC locations.
**Academic Quality**

UMUC’s commitment to academic strength, relevance, and quality remains consistent throughout all the university’s programs, class locations, and delivery formats. The university works closely with its faculty and with business and other organizations to develop and maintain the relevance of its curricula. The university’s academic programs have the same structure and requirements whether they are offered in Maryland classrooms, at overseas locations, or through online courses.

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**Experienced Faculty**

UMUC’s faculty is unique in that most are working professionals who bring current expertise in their fields to the classroom as well as an impressive academic background. They also receive an extraordinary amount of support in training and resources to help them address the special needs of both the online classroom and the adult learner.

**Scholarly Activities**

UMUC is recognized as a world leader in the fields of adult and distance education. UMUC’s Office of Distance Education and Lifelong Learning (ODELL) supports UMUC faculty in every aspect of their work, hosts conferences and workshops, develops resource materials, and seeks grants to further the technologies and pedagogies associated with lifelong learning. ODELL houses the Center for Teaching and Learning, the Institute for Research and Assessment in Higher Education, the Center for Intellectual Property and Copyright in the Digital Environment, and the Institute for Distance Education.

Further activities are carried out by the Institute for Environmental Management, which provides educational services in the field of environmental management to individuals and corporations, and the Institute for Global Management, which conducts research and provides training on topics central to the management of international enterprises. Further information on these institutes may be found on p. 10.

**Recognition**

UMUC’s online programs have received awards from several notable organizations, including E-Gov, Forbes.com, Maryland Distance Learning Association, and the University Continuing Education Association. In fall 2001, UMUC was the proud recipient of the highest honor in online education—the Sloan Consortium Award for Excellence in Institution-Wide Web-Based Programming, in recognition of its comprehensive online curriculum. Recently a number of graduate curricula have also been honored: the National Security Agency designated UMUC a “Center of Excellence” for its graduate track in information assurance and the National University Continuing Education Association has presented an award for the Master of Distance Education program.
Presence in Maryland

Although UMUC has its headquarters in Adelphi, Maryland, it delivers courses and services throughout Maryland and the Washington, D.C., metropolitan area. Courses are offered at 18 locations in the Maryland region, including many local military sites and community colleges. UMUC also maintains a major presence at three centers: the University System of Maryland Shady Grove Center, the Waldorf Center for Higher Education, and the UMUC Annapolis Center. This multitude of locations and the convenience of being able to take courses online make it easy for Maryland residents to complete their education goals without ever leaving their local area. Because UMUC also has special relationships with many Maryland community colleges, students are also able to make a smooth transition from their associate’s degree program to the bachelor’s degree program.

UMUC’s Adelphi headquarters also serves as a conference center and as home to an extraordinary collection of art, especially works by Maryland artists. Notable among the collection are works by internationally renowned Maryland artist Herman Maril. Visitors to the Inn and Conference Center may view the collection daily from 9 a.m. to 5 p.m. Information on current exhibits is available online at www.umuc.edu/events.

Global University

Having provided open and alternative education opportunities to adult learners for more than 25 years, UMUC became an early leader in distance education and has won many awards for innovation in that area. UMUC is also committed to providing comprehensive services for all its students, wherever they may be, and has been a pioneer in the development of support for students at a distance. UMUC offers full Web-based services from orientation to registration, financial aid counseling to career advising, and book ordering to grade retrieval. Through the Office of Information and Library Services, UMUC provides a state-of-the-art digital library, with electronic reserves, online databases (many of which are full text), and online help. Other services are available through the Interactive Registration and Information System (IRIS), which may be accessed via touch-tone telephone. All these services enable students to sample an online course, meet the faculty, access student services, register, and obtain the syllabus, from any location in the world.

Military Partnerships

UMUC has been the leading educational partner with the U.S. Department of Defense for more than 50 years. More than 50 flag officers are UMUC graduates, and more than a million servicemembers have taken UMUC courses. Last year, more than 47,000 active-duty military members and dependents took UMUC courses overseas, 27,000 in Europe.

This long relationship has made UMUC particularly sensitive to the needs of military students and well prepared to handle details specific to military life, such as veterans benefits and the transfer of credit earned in military specialty schools.

In 2002, UMUC was awarded the contract to continue offering programs at its 87 military sites across Europe and the Middle East. The multi-year contract is among the largest federal contracts awarded to any U.S. higher education institution. This year, the U.S. Department of Defense announced that they have extended UMUC’s privilege to serve the U.S. military and their families in Asia for another six years.

UMUC has also developed special relationships with the U.S. Army Signal Center, the Naval War College, the Air War College, the Army Management Staff College, and both the Information Resources Management College and the Joint Forces Staff College of National Defense University.

University of Maryland University College is one of 11 degree-granting institutions within the University System of Maryland:

- 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
- University of Maryland University College

In addition to these 11 institutions, there are two University System of Maryland research and service units:

- University of Maryland Biotechnology Institute
- University of Maryland Center for Environmental Science
**Programs**

In addition to the Graduate School (described on p. 8), UMUC also offers the following programs.

**National Leadership Institute**

The National Leadership Institute (NLI) offers a wide range of noncredit programs and services designed to help managers and executives become more effective as leaders in their organizations and to help organizations enhance their overall leadership effectiveness. NLI programs and services are offered to individuals through open enrollment and to organizations on a contractual basis. NLI programs include the Leadership Development Program and Foundations of Leadership, both offered in association with the Center for Creative Leadership, the preeminent education and research institution devoted to the development of creative leadership and effective management. NLI also offers an online leadership assessment program, designs training programs and consulting services to meet an organization’s unique leadership development needs, and provides executive coaching in highly individualized coaching sessions especially suitable for senior managers.

For more information, students should call 877-999-7195 or e-mail nli@umuc.edu.

**School of Undergraduate Studies**

At the undergraduate level, UMUC offers the Associate of Arts (for military servicemembers only), the Bachelor of Arts, the Bachelor of Science, and the Bachelor of Professional and Technical Studies* degrees. Students may choose an academic major in accounting, Asian studies, biotechnology, business administration, communication studies, computer and information science, computer information technology, computer science, computer studies, criminal justice, English, environmental management, fire science, general studies, history, humanities, human resource management, information systems management, legal studies, management studies, marketing, psychology, and social science. Minors are available in accounting, African American studies, art, art history, Asian studies, biology, business administration, business law and public policy, business supply chain management, communication studies, computer studies, criminal justice, customer service management, economics, English, environmental management, finance, fire science, gerontology, government and politics, health care administration, history, human resource management, humanities, international business management, journalism, management studies, marketing, mathematical sciences, microbiology, natural science, psychology, sociology, speech communication, strategic and entrepreneurial management, and women’s studies.

Most of these programs are available online. UMUC also offers 43 undergraduate certificates covering business and management, communications, computing and technology, gerontology, paralegal studies, and science and security; almost half are available online.

Undergraduate students may take advantage of a number of innovative credit options that can accelerate their progress toward their degree. These include Cooperative Education, which offers credit for new learning in the workplace, and Prior Learning, which offers credit for college-level learning acquired through previous life or work experience.

For more information, students should call 800-888-UMUC or e-mail umucinfo@umuc.edu.

**Leadership for the Future**

The Maryland Higher Education Commission projects that by 2011, one-third of all students enrolled in the University System of Maryland will be studying at UMUC. Since 1997, enrollments in UMUC’s online courses have grown almost 2,200 percent and are expected to continue to climb. Agreements with community colleges are also expanding with the introduction of the new Bachelor of Technical and Professional Studies degree program. UMUC also plans to pilot a new associate’s to master’s degree program in secondary education to help the state meet its critical shortfall of secondary school teachers.

Under the leadership of UMUC President Gerald A. Heeger, UMUC is taking the lead in higher education to enable students in Maryland and worldwide to reach their academic goals.

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* The BTPS degree currently is available only for students who have earned an Associate in Applied Science degree in biotechnology.
The Graduate School

25 Years of Excellence
This academic year, the UMUC Graduate School celebrates 25 years of excellence in graduate education.

In 1978, Dr. Milton A. Grodsky, the first dean of the Graduate School, was given the difficult mission of offering high-quality graduate programs in management and technology to working professionals. The first degree offered was the Master of General Administration (MGA). This program was carefully designed for middle and senior-level managers and emphasized the tasks such people need to perform—planning, budgeting, and resource allocation; organizational communication; managerial leadership; and evaluation of personnel and productivity.

Based on this solid foundation, the Graduate School has experienced enormous growth, expanding from 260 students to more than 10,000 in the last fiscal year. The number of graduates has increased from 12 (in 1982) to 1,199 (in 2003). Degree programs have expanded from a single degree to 17 master’s degree programs in four areas—management, technology, international management, and education—and a doctoral program.

UMUC looks forward to celebrating the success of the Graduate School with current students, alumni, and faculty. Additional information about planned events will be provided in coming schedules and on the UMUC Web site at www.umuc.edu as it becomes available.

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 offered and in their delivery. The curriculum emphasizes leadership, communication, technology, globalization, diversity, systems thinking, critical thinking, information literacy, research competency, and ethical practices. The Graduate School challenges 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. It builds collaborative relationships with other institutions and organizations to achieve its mission. The 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 nonbusiness-related studies such as engineering, computer science, biological and medical science, or social science. Most of the Graduate School’s students are midcareer 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 35 years. Approximately 4 percent of all applicants to the Graduate School hold prior graduate degrees and slightly more than 50 percent of the students are women.

Instructional Sites
Graduate courses are offered at the following Maryland sites:

Adelphi/College Park
UMUC Headquarters
3501 University Boulevard East
Adelphi, MD
800-888-UMUC

Annapolis
UMUC Annapolis Center
190 Admiral Cochrane Drive, Suite 120
Annapolis, MD
410-255-3774 or 301-261-8119
Rockville
USM Shady Grove Center
9640 Gudelsky Drive
Rockville, MD
301-738-6000

Waldorf
Waldorf Center for Higher Education
3261 Old Washington Road, Suite 1020
Waldorf, MD
301-645-4303 or 301-870-6013

Academic Relationships
UMUC is dedicated to the fundamental tenets of collaboration and cooperation with other educational institutions, both public and private, and actively seeks partnerships with other institutions to benefit Maryland citizens.

In support of the university's mission to extend access to educational opportunities, the Graduate School has established various partnerships with the following academic and government institutions:

Capitol College
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. Students in UMUC's Master of Science in e-commerce program may transfer one course from the Capitol College Master of Science in electronic commerce management program to UMUC as an elective, and vice-versa. More information on this arrangement may be obtained from the program director at 800-888-UMUC, ext. 7824.

Military Relationships
UMUC also has established special relationships with a number of the military's institutions of higher education:
- Air War College (for the Master of Science in management, air and space strategic studies track)
- Army Signal Center (for the Master of Science in computer systems management, the Master of Science in information technology, and the Master of Software Engineering)
- Army Management Staff College (for the Master of Science in management, army sustaining base management track)
- Joint Forces Staff College (for the Master of Science in management, joint military strategy, planning, and decision making track)
- National Defense University Information Resources Management College (for the Master of Science in computer systems management and the Master of Science in telecommunications management)
- Naval War College (for the Master of Science in management, naval operations and national security track)

More information on these partnerships is available online at www.umuc.edu/military.

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 degree program. Oldenburg’s participation helps to ensure that the program has a broad global perspective that is critical for distance educators today.
Academic Programs

The Graduate School currently has 18 graduate degree programs, including a Master of Arts in Teaching, a Master of Business Administration, a Master of Education, a Master of Distance Education, a Master of International Management, a Master of Software Engineering, and a Doctor of Management. The Master of Science degree is available in accounting and financial management, accounting and information technology, biotechnology studies, computer systems management, e-commerce, environmental management, health care administration, information technology, management, technology management, and telecommunications management.

The Graduate School also offers several executive degree programs (including Executive Programs leading to a Master of Business Administration, a Master of Science in technology management, or a Master of Science in information technology).

Dual degree programs enable students to acquire two graduate degrees for substantially fewer credits than would be required if the two degrees were earned separately. The Graduate School also offers more than 35 certificate programs in areas of distance education, e-commerce, general management, information technology systems, international management, and management of technological systems.

The Graduate School also offers an accelerated route to teacher certification in Maryland, preparing students with a bachelor’s degree to teach in the Maryland public school system. Courses taken through this resident teacher certification program may also be applied to either the Master of Arts in Teaching or the Master of Education programs at UMUC.

A complete list of current programs may be found on p. 2. For more information, students should call 800-888-UMUC or e-mail gradschool@info.umuc.edu.

Other Programs

The following programs are also administered by the Graduate School.

Institute for Environmental Management

The Institute for Environmental Management provides educational services in the field of environmental management to individuals and corporations, and to federal, state, and local governments. The institute 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.

Further information may be obtained by contacting the director of the Institute for Environmental Management by phone at 800-888-UMUC, ext. 7824, or by e-mail at rbeauchamp@umuc.edu.

Institute for Global Management

The Institute for Global Management conducts research and provides training on topics central to the management of international enterprises. The institute offers customized seminars and consulting services and engages in applied research on topics that prepare managers for the effective conduct of international business. 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 calling 800-888-UMUC, ext. 7200, or by sending an e-mail message to cmann@umuc.edu.
Admission and Enrollment

General Information and Orientation

Before the beginning of each semester, UMUC holds open houses online and in the Maryland area for new and prospective students. An orientation to graduate study is also held annually at UMUC’s Adelphi headquarters before the fall semester. These events offer an opportunity to learn about UMUC and its programs, student services, academic and career options, faculty members, and fellow students. Prospective students can be admitted and register for courses at these times. An online orientation to graduate study at UMUC is also available at www.umuc.edu/grad/orientation.

For general information, or to be directed to specific offices, students may call 800-888-UMUC. Most UMUC offices are open weekdays from 8:30 a.m. to 5 p.m. eastern time. Phone representatives are available for general information 24 hours a day, seven days a week.

Admission

General Admission Requirements

The Graduate School does not require the Graduate Record Examination (GRE) or the Graduate Management Admission Test (GMAT) for admission. Applicants for graduate certificate and master's degree programs must submit, from a bachelor's-degree-granting institution, official transcripts indicating a grade-point average (GPA) of at least 3.0 on a 4.0 scale and completion of the undergraduate program. The completed application for admission (found at the back of this catalog) must be accompanied by a personal statement and the application fee.

Applicants for the Doctor of Management program have different requirements and must complete a separate application form, which may be obtained from the program office at 800-888-UMUC, ext. 7056.

Program Requirements

Individual programs may have requirements in addition to those listed above. These are detailed under the program description.

Admission Status

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

Degree Status

Degree status is granted to students who wish to pursue a specific degree or certificate program and meet or exceed the general criteria listed above, as well as any program-specific requirements. 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 regular status or lack some preparatory coursework for an individual program. (Specifics are listed under individual degree programs.) 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 two graduate courses (6 credits) while in the provisional category. Those who maintain a 3.0 GPA at the completion of the 6 credits with no grade of C, and meet all other admission requirements, are moved automatically to regular status. No courses may be repeated while a student is in provisional status.

Decision-Pending Status

The decision-pending classification is short term and is meant for students who have not yet submitted all supporting documentation (e.g., transcripts) for their application. Students in most programs may enroll in one graduate course before UMUC has received the official transcript from the bachelor's-degree-granting institution. Students must receive an admission decision before subsequent enrollments.
Admission Procedures

To apply for admission, students must complete a graduate admission application and pay the nonrefundable $50 fee. Applications for admission may be submitted by mail, by fax (to 301-985-7364), online, or in person. Deadlines for admission and registration are listed in the current Graduate Schedule of Classes. The admission form is available in the Enrollment Forms Packet at the back of this catalog, in the Graduate Schedule of Classes, and on the Web at www.umuc.edu/forms.

To allow time for processing, applicants who wish to take advantage of touch-tone or Web registration must ensure that their applications reach Graduate Admissions at least one week before the touch-tone and Web registration deadlines.

Determination of Residency for Tuition Purposes

An initial determination of in-state or out-of-state status for tuition purposes is made when a student applies for admission. The determination made at that time remains in effect thereafter unless it is successfully challenged. The student is responsible for providing the information necessary to establish eligibility for in-state status. Official criteria for determining residency are in the chapter on University Policies.

Information on tuition and fees may be found on p. 15.

Readmission

Students who have not enrolled in graduate classes at UMUC for more than a year must complete a new application for admission and pay another application fee.

Students who were academically dismissed from the Graduate School will not be considered for readmission.

International Applicants

To be considered for admission, international students must present

- 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. 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, DC 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, CA 90231-3655 USA
   Phone: 310-258-9451; Fax: 310-342-7086
   E-mail: info@ierf.org

Additional information on these evaluation services is available online at www.umuc.edu/students/credeval.

- Proof of 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.

- Documentation of residency status.

Applicants must provide 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.

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 TWE scores.

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

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.

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 (three consecutive semesters) 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.

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

Registration

Ways to Register

Registration begins each semester as soon as the course schedule becomes available on the Web and continues until classes begin. A late fee is charged for registering after the regular registration period. Students should check the current Graduate Schedule of Classes for the deadlines for regular and late registration.

UMUC offers five ways to register for most courses: by phone via the Interactive Registration and Information System (IRIS), by mail, by fax, online, and on-site.

By Telephone via IRIS

Students are eligible to register by phone via the Interactive Registration and Information System (IRIS) if they have already been admitted to UMUC as a graduate student and have received a personal identification number (PIN). (Note: Former students who have not registered for courses within the last year must first be readmitted.) Through IRIS, students may register by entering all pertinent information via their touch-tone telephone. IRIS provides immediate feedback on course availability and the student’s registration, student account, and financial aid status.

Students may call IRIS at 800-584-9413 or 301-985-7499 daily from 6 a.m. to 9 p.m. eastern time. Detailed instructions on IRIS registration are available each semester in the Graduate Schedule of Classes and online at www.umuc.edu/iris.

By Mail

Students may mail their registration to Registrar’s Office, University of Maryland University College, 3501 University Boulevard East, Adelphi, MD 20783. Forms are available online at www.umuc.edu/register and in the Graduate Schedule of Classes.

By Fax

Students may fax their registration to 301-985-7175. Forms are available in the Graduate Schedule of Classes and online at www.umuc.edu/register.

Students who have an employer contract must be sure to fax their registration and employer contract at the same time. Any fees not covered by the contract must be charged to VISA or MasterCard.

Online

Students may register online at www.umuc.edu/register. Note: The process is not yet fully automated and requires manual processing by UMUC to complete. Therefore, there may be a delay of one or more days before processing.

On Site

Walk-in admission and registration is held in the Student and Faculty Services Center in Adelphi, Maryland, and at a number of other locations in the Baltimore/Washington metropolitan area. Students may register for any course offered (regardless of location or format) at any walk-in registration. Locations, dates, and times are listed each semester in the Graduate Schedule of Classes.

The Waiting List

If a class is already full at the time of registration, the student has the option of placing his or her name on a waiting list for that class. Students who register by mail, fax, or online (and list no alternate classes) are added to the waiting list automatically. Students who register by phone are prompted by IRIS to choose that option.
Waiting List Policies

Regardless of how the student registers, the following policies apply:

- Students who do not want the course or who select another option should remove themselves from the waiting list so that other students may register if seats become available.

- Students may not attend a class for which they are on the waiting list.

- Faculty members and academic advisors are not authorized to add students to a closed class. Authorization may be provided only through IRIS by following the waiting list process.

- Students who are on the waiting list for one section of a particular course are not automatically registered to a new section if one is added. If the student wishes to attend the new section, he or she must register for the new section and remove his or her name from the waiting list for the section that was full. Students should use the schedule on the UMUC Web site or call IRIS to check for new course sections.

- If space in class becomes available, it will be held for the student (pending confirmation) for 48 hours only. After 48 hours, the space is released to another student. The student will not be contacted if a space being held for him or her in a course becomes available—it is the student’s responsibility to check in regularly with IRIS to find out course status.

- If the student has registered for another course and wishes to drop that course to accept a place in a class for which he or she is on the waiting list, he or she will be assessed a $15 fee for the course that is dropped.

The easiest way for a student to confirm registration for a class is to register through IRIS (following directions from the list course menu) and pay by entering his or her credit-card (VISA or MasterCard) information.

Schedule Adjustment

Students may make certain adjustments to their schedule through the first week of classes. The schedule-adjustment options available include changing a section or exchanging one class for another (drop/add). Students may drop/add a course only within the same academic term or semester. A fee of $15 is charged for changing a section or exchanging one course for another. Students may add a course or change a grading option without charge.

Withdrawals or Dropped Courses

Stopping payment on checks for registration fees, or not paying at registration, does not constitute an official withdrawal or relieve the student of his or her financial obligation to UMUC. Never attending or ceasing to attend class(es) does not constitute a withdrawal.

Students who officially withdraw from a course receive a mark of W (described on p. 26). Graduate students must officially withdraw no later than two weeks (14 days) before the final class.

Students may withdraw from a course by four methods:

- Students may call IRIS at 800-584-9413 or 301-985-7499 and follow the directions for dropping a course. The use of the student and personal identification numbers is considered an official “signature” authorizing the withdrawal, which is effective immediately.

- Students may access ISIS online at www.umuc.edu/isis and follow the directions for dropping a course. The use of the student and personal identification numbers is considered an official “signature” authorizing the withdrawal, which is effective immediately.

- Students may complete a withdrawal form through their advisor. The withdrawal becomes effective the date the form is filed with UMUC.

- Students may request in writing to withdraw from a course or courses. The letter should specify the course, course number, and section, and include the student’s full name, student identification number, and signature. The request should be addressed to Registrar’s Office, University of Maryland University College, 3501 University Boulevard East, Adelphi, MD 20783. The postmark on the envelope becomes the official date of withdrawal. Note: Because the Graduate School can honor only withdrawal requests actually received, it is recommended that students ask for a return receipt from the post office to ensure that delivery of the withdrawal will be acknowledged.

In all cases, the student should maintain a copy of the transaction for his or her records.

UMUC cannot accept withdrawals verbally over the telephone. Failure to withdraw in the required manner results in the forfeiture of any refund and may result in a failing grade. For financial aid recipients, failure to withdraw in the required manner may result in cancellation/reversal of financial aid rewards.
Financial Information

Tuition and Fees

All tuition and applicable fees must be paid in full at registration, unless the student is enrolled in UMUC’s interest-free monthly payment plan. Students registering by phone via the Interactive Registration and Information System (IRIS) are granted a certain number of days for payment to be received. (If payment is not received by the specified deadline, the registration may be canceled—unless the student is a financial aid recipient.)

Payment may be made by cash, check, money order, or MasterCard or VISA credit cards. Checks should be payable to University of Maryland University College. Students who qualify for tuition assistance, financial aid, or veterans benefits should consult the appropriate sections. Students interested in the monthly payment plan, administered by Academic Management Services (AMS), should contact AMS at 800-635-0120 or visit www.amsweb.com on the Web.

Current Tuition and Fees

Tuition rates and fees are published each semester in the Graduate Schedule of Classes and are available on the Web at www.umuc.edu/tuition. Students should review the fee schedule carefully to see which ones apply. Fees are commonly charged for applications for admission and graduation, late registration or changes to registration, make-up testing, technology, transcripts, and replacement ID cards. There is also a service charge for dishonored checks.

Refunds

The official date used to determine a refund is either the date the withdrawal form is hand-delivered to the Information Desk at the Student and Faculty Services Center, the date and time of the IRIS or ISIS request, or the postmark date on a mailed request. The official date for federal financial aid recipients is the last date of class attendance as determined by federal regulations.

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

Tuition is refunded as follows:

For Student Withdrawals During Fall and Spring Semesters

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

For Student Withdrawals During Summer Semester

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.

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.

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

For each check returned unpaid by the payer's bank (whether because of insufficient funds, stopped payment, postdating, or drawing against uncollected items), UMUC assesses a service charge of $25 (over and above any service charges levied by the financial institution).

A student who stops payment on a check for tuition is thereby neither disenrolled nor relieved of responsibility for paying tuition and fees. Anyone whose checks for tuition or fees remain dishonored may be barred from classes.

Indebtedness to the University

Students who incur debts to UMUC must clear them to be permitted to register. Requests for transcripts and diplomas are denied until all debts have been paid. Outstanding debts are collected against refunds due the student. After a reasonable period of time, uncollected debts are forwarded to the Central Collection Unit of the State Attorney General's Office.

The Board of Regents has authorized UMUC to charge students' delinquent accounts for all collection costs incurred by UMUC. The normal collection fee is 17 percent plus attorney and/or court costs. Delinquent students are reported to a credit bureau.

Employer-Provided Tuition Assistance

If an employer is going to pay for part or all of a student's tuition, at the time of registration the student must submit two copies of a document (purchase order, tuition assistance form, or contract on company letterhead) containing the following information:

- A specific description of types of fees and charges (such as tuition, application fee, late-registration fee, change-of-registration fee, or books) and the amount to be assumed by the employer.
- The student's name and student identification number.
- The semester or term covered by the document.
- The billing address.
- The signature and telephone number of the authorizing official.

A student who does not have an authorizing document at the time of registration must pay the bill in full and arrange for direct reimbursement from the employer. UMUC cannot issue refunds for authorizing documents submitted after registration.

No credit is granted for any fees unless specified. If specified in the authorizing document, the student may charge books and supplies for 15 days after the end of each registration period. After that time, the student must pay for the books. The student must submit a separate copy of the authorizing document to the University Book Center when charging books.

Documents that restrict payment or are in any way conditional will not be accepted. If the employer does not pay UMUC within 75 days of the date on the bill, the student is responsible for payment.

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. More complete information is available online at www.amsweb.com or from Academic Management Services (AMS) at 800-635-0120.
Services and Resources

Available of Services
UMUC provides services and resources to help students all over the world complete their educational programs—through automated systems and resources available online or by telephone, by e-mail and telephone communication, and in person at sites throughout the Maryland area. A number of offices are responsible for the delivery of these services, including the Career and Cooperative Education Center and the offices of Financial Aid, Information and Library Services, Information Technology, and Student Affairs.

Among these, the Office of Student Affairs responds to most of the student’s academic needs throughout his or her college career, providing general information; admission assistance; academic advising; registration, graduation, and transcript services; veterans benefits assistance; and services for disabled students.

In the Maryland area, services are available at the following locations:

**Adelphi (UMUC Headquarters)**
gradschool@info.umuc.edu
Phone 800-888-UMUC; Fax 301-985-7155

**Annapolis Center**
Phone 410-266-3774 or 301-261-8199; Fax 301-261-8655

**Shady Grove Center**
Phone 301-738-6000; Fax 301-738-6040

**Waldorf Center for Higher Education**
Phone 301-645-4303 or 301-870-6013; Fax 301-870-6939

**General Information**
UMUC phone representatives are available all day, every day, at 800-888-UMUC to provide answers to general questions and for help navigating UMUC’s Web site. Representatives can also make sure that callers are on the UMUC mailing list to receive upcoming class schedules and other important announcements.

**Admission Assistance**
Enrollment specialists serve individuals who are inquiring about becoming UMUC students at some future time or are admitted but have not yet registered. They can help prospective students apply for admission, identify financial aid opportunities, plan their curriculum, and register for their first semester of classes.

Enrollment specialists can also help qualified senior citizens apply for Golden Identification benefits. More information is on p. 18.

Prospective and new students may contact an enrollment specialist by phone at 800-888-UMUC or by e-mail at enroll@umuc.edu. More detailed information on admission is available on p. 11.

**Automated Services**
A number of automated services are available to current students by telephone through the Interactive Registration and Information System (IRIS) and online through the Interactive Student Information System (ISIS).

Through IRIS, students can register for classes or make changes to their registration, look up their grades for the current semester or the two previous semesters, and check on the status of their financial aid application. IRIS is available seven days a week, from 6 a.m. to 9 p.m. eastern time, at 800-584-9413 or 301-985-7499.

Through ISIS (available online at www.umuc.edu/isis), students have access to many of their personal UMUC records. ISIS enables them to change personal information (such as home address, e-mail address, or phone numbers), view and print reports (such as their class schedule, grade report, statement of account, unofficial transcript, and academic audit), and register for final examinations for online courses.

To access services via IRIS or ISIS, students must enter their student identification number and personal identification number (PIN).

**Advising**
All students admitted to degree status are assigned an advisor, who will help guide them 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.

Students are encouraged to contact their advisors to prepare study plans before completing 9 semester hours. These study plans are then reviewed by the program advisor in the academic department. Students who have not attended UMUC for a year or more should also contact an advisor, once they are readmitted, for assistance in getting back on track.
It is up to the student to seek advising and to keep track of his or her program requirements. Students should retain the catalog of the year 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.

Students may contact advisors by phone, fax, or e-mail. In the local metropolitan area, students also have the option of scheduling an appointment with an advisor in person at the sites listed on the previous page.

**Evaluation of Transfer Credit**

An advisor can help students determine whether any previous graduate coursework is eligible to be accepted as transfer credit.

Up to 6 semester hours of graduate credit may be considered for transfer to most graduate degree programs at UMUC if earned at a regionally accredited institution and if applicable to the student's program of study. Only 3 credits may be considered for transfer to the Master of Business Administration program, and the Master of Arts in Teaching program does not accept transfer credit. The Graduate School will accept up to 3 graduate transfer credits for a 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. (However, these grades are not included in the calculation of the student's grade-point average.)
5. The department 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 the American Council on Education (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.

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**Services for Students with Disabilities**

Reasonable accommodations are available for students who have disabilities and are enrolled in any program offered at UMUC. To allow for adequate planning, students who need accommodations should contact the director of Veteran and Disabled Student Services at least four to six weeks before the beginning of the semester.

Students must request accommodations each time they register. The first time a student requests accommodation, current (within three years) documentation of a disability must be submitted. Depending on the disability, documentation may include secondary school records; medical, psychiatric, or psychological reports and diagnoses; or a psychoeducational evaluation. The documentation must provide clear and specific evidence of a disability and recommended accommodations from a qualified licensed professional.

For more information, students should call the director of Veteran and Disabled Student Services at 800-888-UMUC, ext. 7930, or 301-985-7466 (TTY) or send an e-mail to vdsa@umuc.edu.

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**Transcript Services**

Students should contact the Office of the Registrar to receive an official UMUC transcript. Written requests should be addressed to Office of the Registrar, University of Maryland University College, 3501 University Boulevard East, Adelphi, MD 20783. Transcripts may also be requested by phone (at 800-888-UMUC, ext. 7730) or online via ISIS (at www.umuc.edu/isis).

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**Graduation Services**

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

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**Golden ID Program**

Senior citizens may qualify for participation in the Golden Identification program, which allows them to register for up to 6 credits per semester without paying tuition. 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. Golden ID students may only register during late registration on a space-available basis. Benefits do not apply to Executive Program or 700-level courses. To request an application, students should contact Graduate Student Affairs at 800-888-UMUC, ext. 7155.
Drug and Alcohol Awareness

As required by federal law, UMUC provides referral services for students with concerns about the use or abuse of alcohol and drugs. Students may discuss referrals with their advisor.

UMUC’s policy on drug and alcohol abuse is listed in the chapter on University Policies.

Student Advisory Council

The Student Advisory Council provides an avenue for students to express their concerns about UMUC or their academic career. The council consists of 12 members, elected by their fellow students, who act in an advisory capacity to the university president, provost, deans, and other officials on behalf of all students.

Students who would like to see certain issues addressed or who have questions should contact their council representative by e-mail at stac@umuc.edu.

More information on shared governance is available in the chapter on University Policies in this catalog and online at www.umuc.edu/gov.

Bookstores

Textbooks and supplies may be ordered online, by phone or fax, or in person from several bookstores, many of which are convenient to the sites where classes meet. At some regional locations, either the textbooks themselves or order forms are available to facilitate purchases. Bookstores usually have updated lists of the books required for each course. The Graduate Schedule of Classes and the UMUC Web site contain information about obtaining required and recommended textbooks and other materials.

Career and Cooperative Education Center

The Career and Cooperative Education Center at UMUC serves all UMUC undergraduate and graduate students and alumni 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 resources are offered by the center to help students and alumni explore and achieve their academic and career goals and gain the skills needed to be self-sufficient in pursuing those goals. Some services are provided in conjunction with representatives from Graduate Student Affairs.

Students and alumni may take advantage of career resources by accessing the Web page at www.umuc.edu/careercenter, by calling 800-888-UMUC, ext. 7780, or by visiting the center in Adelphi, Maryland. Students coming to the center are encouraged to call or send an e-mail (to careercenter@umuc.edu) in advance to request an appointment.

Programs and services include

- Online résumé posting through CareerQuest
- Access to employment recruiters online through CareerQuest
- Online resources and links for career decision making and development
- Online career assessment
- UMUC Mentor Network
- Job posting notebooks (available on-site)
- A computer workstation, available in the Adelphi offices by appointment or on a first-come, first-served basis

Job-search assistance is provided through the Job Development Seminar, offered online and on-site for a fee. The seminar provides comprehensive information on preparing for and conducting a job search. Optional follow-up services include a professional résumé review and a mock interview session.

Information sessions are presented via telephone conference twice each month, on Tuesdays from 1 to 2 p.m. The sessions are free and designed to help students understand the career planning process, determine where they are in the process, and identify actions and resources to meet their current career challenge.

Computer Labs and Services

Computer labs are available at many UMUC sites (including Adelphi, Annapolis, Shady Grove, and Waldorf). These labs are available primarily for the use of students completing coursework, but are also open to faculty members, staff, and alumni on a first-come, first-served basis on presentation of a valid UMUC ID. Students must bring a floppy or zip disk to save data or documents.

Lab assistants are available during scheduled hours to help users with resident software programs, but cannot provide tutoring.

Students may also access host computers at UMUC via the Internet using Telnet. Two host systems are accessible: Nova and Polaris. Students must have an account for the particular system they wish to use. For most students taking courses in computing, accounts are set up automatically as part of the coursework and are valid for the duration of the class.

Technical support for students taking online courses is available 24 hours a day, seven days a week, at webtychosupport@umuc.edu or 800-807-4862.
Information and Library Services

UMUC’s Information and Library Services promotes the use of library technology and resources, teaches library research classes, and provides access to a variety of library resources on the Information and Library Services Web page at www.umuc.edu/library. UMUC reference librarians are located in the Student and Faculty Services Center in Adelphi, Maryland, and at the McKeldin Library on the campus of University of Maryland, College Park. Reference librarians also are available to assist students via telephone and Web-based conferencing. In addition, 24-hour assistance is provided via e-mail and interactive chat.

Resources that currently enrolled students can access through the Web page include the online catalog of the University System of Maryland and Affiliated Institutions (USMAI), tutorials on how to conduct research and cite sources, and more than 100 databases, most providing 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.

Information and Library Services 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 USMAI libraries. Students also are encouraged to make use of library resources in their residential areas, including community colleges and other libraries. The USMAI online catalog is available from the Information and Library Services Web page at www.umuc.edu/library or through WebTycho. To borrow USMAI materials, students must have a current semester sticker and bar code on their UMUC student ID card. (The current sticker is included with the registration packet each semester.) USMAI library materials can be delivered for pickup at any of the USMAI libraries 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, all UMUC students can request, through interlibrary loan, that journal articles or book chapters that are not available in full text online be mailed or sent to them electronically in a portable document format (PDF) file via the Web.

Students who have any questions about these or other library services or resources should call 800-888-UMUC, ext. 7209.

Financial Aid

UMUC’s Financial Aid Office administers a variety of financial assistance programs—including grants, loans, federal work-study, and scholarships—to help students meet the costs of their university education. Aid is available for students who can prove financial need, academic merit, or both. Students are urged to research the various sources of aid through their employers and through the UMUC Financial Aid Office.

UMUC attempts to assist all adult students, particularly those studying part time, who would otherwise be unable to afford a college education. Regardless of income level, all students are encouraged to apply for assistance; many financing alternatives are available.

Students must apply for aid through UMUC, not through any other office or institution of the University System of Maryland. (This can be a confusing point; students must be clear in all correspondence.) Students must reapply for financial aid at each school attended.

General Eligibility Requirements

An eligible applicant for UMUC need-based-assistance must

- Be admitted to UMUC as a regular degree-seeking or eligible certificate-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) for federal loan programs. Institutional aid requires enrollment for at least 3 credits.
- Demonstrate satisfactory academic progress toward a degree or certificate according to UMUC policy.
- Have a high school or GED diploma.
- 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 on any grant under Title IV federal student aid programs.
- Not be ineligible based on a drug conviction.

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 2003–4 award year. For more detailed information, students may refer to the current *UMUC Guide to Financial Aid.*

**Grants and Scholarships**

Gift assistance, for which no repayment is required, is offered by the state of Maryland and UMUC. The UMUC 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 grants to students who demonstrate financial need. Typical awards during the 2003–4 year will range from $100 to $500 per semester, based on need. Funds are limited, so students are urged to apply early.

**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 to $1,500 per semester, depending on the specific program. Most scholarships require a minimum GPA for consideration. Students may refer to the UMUC scholarship brochure for further information.

**Maryland state grant and scholarship programs** provide financial assistance to Maryland residents based primarily on financial need. Awards to graduate students typically require enrollment of at least 6 credits per semester. Award amounts range from $200 to $3,000 annually. Senatorial and Delegate Scholarship awards are based on criteria established by the elected official. For more information, students should contact the Office of Student Financial Assistance at 410-260-4565 or 800-974-1024.

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. Students should inquire about scholarship possibilities through organizations with which they have an affiliation. Additional scholarship links and search tools are available through the Web at [www.umuc.edu/financialaid](http://www.umuc.edu/financialaid).

**Loans**

Loan programs are available to students enrolled for at least 6 credits per semester. Students who take 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 $1,500 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 Loan, which is based on financial need. Students can also acquire an unsubsidized Federal Direct Loan, which is not based on need—that is, personal or family income level is not considered. 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 the student leaves school or attendance drops below half time. For annual award amounts and general repayment terms, students should see the *UMUC Guide to Financial Aid.*

**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 through private student loan programs offered by many 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 are generally required to be enrolled for at least 6 credits. 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 usually mailed directly to the borrower. Students who are interested in an alternative student loan should contact the bank of their choice or visit UMUC’s Web page on alternative student loans at [www.umuc.edu/financialaid](http://www.umuc.edu/financialaid) for more information.
Employment Programs for Students

UMUC recognizes the importance of flexible, part-time employment for students who are in transition or who have financial need.

The Federal Work-Study program is a need-based program that provides jobs to assist students in meeting college costs. The amount of the award varies according to financial need and availability of funds. Funds are paid biweekly, based on hours worked. Students must apply and be hired for employment in the university setting or in an approved community-service position. Students who do not secure such employment forfeit their work-study award. More information is available from the Financial Aid Office.

UMUC Financial Aid Standards for Satisfactory Academic Progress

Federal regulations require students receiving financial aid to maintain satisfactory academic progress toward their degree or certificate. Students who fail to meet the minimum academic standard are placed on financial aid probation for one semester, during which they may receive financial aid. If a student fails to meet the minimum requirements during probation, the student is denied aid the following semester and financial aid is not disbursed. Students should refer to the chapter on University Policies for details of the appeal process and the complete Satisfactory Academic Progress policy for financial aid students.

Completing the Financial Aid Application Forms

Students must complete the Free Application for Federal Student Aid (FAFSA) and the UMUC Financial Aid Data Form 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 six to ten weeks, so students are encouraged to apply early. The UMUC Guide to Financial Aid provides more information on the application process.

UMUC Financial Aid Priority Deadlines

One of the most important aspects of the financial aid process is applying 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. Students meeting the priority deadlines will also enjoy the security of having their award authorizations ready at the time of registration. Those 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.

To be given high priority for their financial aid applications and a determination of eligibility early enough for funds to be reserved by registration, students should complete both their Free Application for Federal Student Aid (FAFSA) and the UMUC Financial Aid Data Form by the priority deadlines below.

<table>
<thead>
<tr>
<th>Program or Period Being Applied for</th>
<th>Priority Deadline for Filing Financial Aid Forms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maryland State Scholarships</td>
<td>March 1</td>
</tr>
<tr>
<td>Full Academic Year or Fall Semester Only</td>
<td>June 1</td>
</tr>
<tr>
<td>Spring Semester Only</td>
<td>November 1</td>
</tr>
<tr>
<td>Summer Semester</td>
<td>April 1</td>
</tr>
</tbody>
</table>

Federal Return of Funds Policy

Students receiving federal financial aid have the responsibility to follow the institution’s withdrawal procedures as outlined on p. 14 of this catalog. The 1998 Reauthorization of the Higher Education Act requires the university to calculate a return of Title IV funds for 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 that were “unearned” based on the percentage of attendance. Students who stop attending all classes without officially withdrawing are also 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 teachers. For further information, students should refer to the UMUC Guide to Financial Aid.
For Further Information

Information and applications are available from the Financial Aid Office. Students can also obtain a current financial aid kit by contacting their advisor. All financial aid information and forms are also available at www.umuc.edu/financialaid on the UMUC Web site. Students with additional questions should either contact the Financial Aid Office by phone at 800-888-UMUC, ext. 7510, or by e-mail at gradfinaid@umuc.edu.

Veterans Benefits

Veterans Benefits Programs

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 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 (MGIB, 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. If the service does not pay 100 percent of tuition and fees and the student is on active duty, is eligible for MGIB benefits, and plans to use tuition assistance, the student may apply for MGIB Tuition Assistance Top-up for the balance. The amount of the benefit is limited to the amount that the student would receive for the same course(s) if regular MGIB benefits were being paid. In no case will the amount paid by the military combined with the amount paid by the Department of Veterans Affairs exceed the total cost of the course(s). The use of Tuition Assistance Top-up reduces future entitlement to MGIB benefits. Further information on Tuition Assistance Top-up is available on the Department of Veterans Affairs Web site at www.gibill.va.gov.

■ 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.

■ 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

Students who are eligible for educational benefits from the U.S. Department of Veterans Affairs should review the online information on application procedures (at www.umuc.edu/vabenefits). Every educational assistance program requires different paperwork and documentation to process a claim. Initial applications for benefits may be submitted online directly to the U.S. Department of Veterans Affairs. All students must also complete a UMUC Veterans Certification form each semester.
they wish to receive benefits. The U.S. Department of Veterans Affairs processes claims and issues payment six to eight weeks after receiving completed paperwork.

**Amounts and Methods of Payment**

The amount of money a student may receive from the U.S. Department of Veterans Affairs depends on the educational assistance program for which the student is eligible, the number of semester hours of credit for which the student is registered, the length of the semester, and (for certain programs) the number of dependents the student has. The current monthly payment for each educational assistance program is available online at [www.umuc.edu/vabenefits](http://www.umuc.edu/vabenefits).

Benefits are paid directly to students on a monthly basis. The money may be used to help with tuition, books, or other costs of college education. Eligibility for benefits does not delay payment of tuition.

The U.S. Department of Veterans Affairs offers an accelerated payment program to students eligible for MGIB benefits. The program provides a lump-sum payment of 60 percent of a student’s tuition and fees for certain high-cost, high-tech programs. To receive accelerated payment, the tuition and fees for a semester must be more than double the MGIB benefits that a student would receive otherwise for the semester. More information on the accelerated payment program is available on the U.S. Department of Veterans Affairs Web site (at [www.gibill.va.gov](http://www.gibill.va.gov)).

**Evaluation of Prior Training**

When a student files a claim for educational benefits, the U.S. Department of Veterans Affairs requires previous training to be evaluated so that the student receives correct transfer credit. Students who have graduate credit earned from a regionally accredited institution must have an evaluation completed during the first semester of attendance. Students who do not comply may find future benefits delayed. After their first registration, eligible students are provided with information on the necessary procedure.

**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.
- 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, 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.

**Noncredit Graduate Courses**

The U.S. Department of Veterans Affairs does not pay benefits for noncredit graduate courses.

**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.

**For Further Information**

Information and applications are available from the student’s advisor or at [www.umuc.edu/vabenefits](http://www.umuc.edu/vabenefits) on the UMUC Web site.
Academic and Administrative Requirements

Grading Methods
There are four grading methods at UMUC. The most commonly used is the standard method. The pass/fail alternative is available only under limited conditions. The satisfactory/incorrect/fail method is restricted to certain specified courses. Any course may be audit-ed. Regulations for each are given in the following paragraphs.

<table>
<thead>
<tr>
<th>GRADE or MARK</th>
<th>INTERPRETATION</th>
<th>QUALITY POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Outstanding scholarship</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>Good scholarship</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>Satisfactory scholarship</td>
<td>2</td>
</tr>
<tr>
<td>F</td>
<td>Failure</td>
<td>0</td>
</tr>
<tr>
<td>FN</td>
<td>Failure for nonattendance</td>
<td>0</td>
</tr>
<tr>
<td>G</td>
<td>Grade under review</td>
<td>0</td>
</tr>
<tr>
<td>P</td>
<td>Passing</td>
<td>0</td>
</tr>
<tr>
<td>S</td>
<td>Satisfactory</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete</td>
<td>0</td>
</tr>
<tr>
<td>AU</td>
<td>Audit</td>
<td>0</td>
</tr>
<tr>
<td>W</td>
<td>Withdrawal</td>
<td>0</td>
</tr>
</tbody>
</table>

Standard
Unless students choose the audit option at the time of registration, they will be given a letter grade according to the standard method. Under the standard grading method, students are given a grade of A, B, C, or F on the basis of their performance in meeting the requirements of each course.

For Executive Program courses and management projects, the standard grading method is replaced by the satisfactory/incomplete/fail method. For noncredit courses, the standard grading method is replaced by the pass/fail method.

Pass/Fail
Noncredit courses, such as the required graduate library skills course, are graded on a pass/fail basis. Students may not choose to take other courses on a pass/fail basis.

Satisfactory/Incomplete/Fail
This grading method is available only on a limited basis. Although a grade of satisfactory (S) earns credit toward graduation, it is not included in calculating grade-point averages. The mark of incomplete (I) earns no credit and is not included in computing grade-point averages, but is included in computing the course completion rate (explained on p. 160). While a failing grade (F) earns no credit, it is included in computing grade-point averages.

Audit
Students who do not wish to receive credit may register for courses as auditors after they have been admitted. Students must indicate this intention when they register. Students may request a change from credit to audit status anytime before the end of the fifth scheduled week of a semester.

Audited courses are listed on the permanent record, with the notation AU. No letter grade is given for audited courses, nor are credits earned.

Grades and Marks

The Grade of A
Only students who demonstrate exceptional comprehension and application of the course subject matter merit an A.

The Grade of B
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, that 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.
The Grade of C
The grade of C indicates that the student has passed the course. However, the grade of C is not considered to meet overall standards for graduate work. Students should refer to Academic Standards for further information on the implications of a grade of C.

The Grade of F: Failure
The grade of F means a failure to satisfy the minimum requirements of a course. Although it carries no credit, it is included in calculating the grade-point average. A student assigned the grade of F must register again for the course, pay the applicable fees, repeat the course, and earn a passing grade in order to receive credit for that course. More information on repeating courses is on p. 27.

The Grade of FN: Failure for Nonattendance
The grade of FN means a failure in the course because the student has not attended or participated in course assignments and activities. It is assigned when the student ceases to attend class but has not officially withdrawn.

The Grade of P: Passing
Since the grade of P is only awarded for noncredit graduate courses, it is not included in calculating the grade-point average. It does, however, appear on the permanent record.

The Grade of S: Satisfactory
The grade of S is only awarded for management projects and Executive Programs courses. Although the grade of S confers credit and appears on the permanent record, courses graded S are not used in determining grade-point averages.

The Mark of G: Grade Under Review
The mark of G is an exceptional and temporary administrative mark given only when the final grade in the course is under review. It is not the same as a mark of Incomplete.

The Mark of I: Incomplete
The mark 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 mark 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 members may not issue a terminal I mark.

Notice of grade changes must reach the Registrar’s Office 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. The Registrar’s Office will notify each student who has been given an I when the grade change is finalized.

The Mark of W: Withdrawal
Students who officially withdraw from a course after the end of the schedule adjustment period receive a mark of W. This mark appears on the permanent record unless withdrawal is completed before a course begins. For purposes of financial aid, the mark of W is counted as attempted hours. It is not used in determining grade-point averages.

The withdrawal process is described on p. 14.

Computing the GPA
The grade-point average is calculated using the quality points assigned to each grade or mark (chart on p. 25). First, the quality-point value of each grade or mark is multiplied by the number of credits; then the sum of these quality points is divided by the total number of credits attempted for which a grade of A, B, C, or F was received.

Changes in Grade
Teachers may change a grade previously assigned through the Interactive Faculty Information System (IFIS). Any change must be made no later than six months after the original grade was awarded.
Grading Repeated Courses

When a course is repeated, only the higher grade earned in the two attempts is included in the calculation of the GPA. For purposes of financial aid, both attempts are counted. Both grades are entered on the permanent record, with a notation indicating that the course was repeated. Students cannot increase the total hours earned toward a degree by repeating a course for which a passing grade was conferred previously.

To establish credit in a course previously failed or withdrawn from, students must register, pay the full tuition and fees, and repeat the entire course successfully.

Academic Standards

Master’s Degree and Certificate Programs

Graduate students are required to maintain a 3.0 GPA at all times. No more than 3 credits of coursework graded C may be applied toward the completion of a student’s master’s degree or certificate requirements.

Students in degree status have 12 credits 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.

Provisional students must have a GPA of 3.0 at the completion of the first 6 credits in a program. Students who fail to earn that average will be dismissed.

After a student completes one academic year (12 credits), a cumulative GPA of 3.0 will constitute evidence that the student is able to succeed in a graduate program.

A student encountering academic difficulty is expected to seek guidance and counsel from a faculty member or an advisor.

Repeating Courses

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 or 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. A student who has repeated a course while pursuing his or her first graduate degree is not entitled to repeat another course if he or she receives a second C or F while pursuing the second degree.

The option to repeat a course is not permitted for students admitted with provisional status. Therefore, a student in provisional status who receives a C or F in his or her first 6 semester hours or earns a GPA below 3.0 will be academically dismissed.

If a student in degree status 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 once the student has completed 12 credits. However, any course or seminar of more than 3 credits in which a grade of C is earned must eventually be repeated, since students cannot apply more than 3 credits of coursework with a grade of C to degree requirements.

A final grade of C in a course that is not applied toward degree (or certificate) requirements does not have to be repeated, unless this grade reduces the student’s overall GPA to below 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.

Doctor of Management Program

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 coursework at the 600 level (courses open to both master’s degree 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.

Repeating Courses

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 in any course, will be academically dismissed from the DM program.
**Academic Jeopardy and Dismissal**

At the end of every term, the cumulative grade-point average of each student who has attempted at least 12 semester hours at UMUC is computed, based on all UMUC graded coursework. At the end of each semester (fall, spring, or summer), Graduate Student Affairs takes action, required by UMUC policy, according to the student’s level of progress as described below.

There are three levels of academic progress: satisfactory, jeopardy, and dismissal.

**Levels of Progress**

**Satisfactory**
A student whose cumulative grade-point average is 3.0 or higher is considered to be making satisfactory progress.

**Academic Jeopardy**
Academic jeopardy is a temporary status in which students in degree status have the opportunity to restore their GPAs to 3.0.

A student is considered to be in academic jeopardy when
- the GPA falls below 3.0 for the first time,
- a second C is recorded, or
- 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 already enrolled in a course for the next semester, the student will be administratively withdrawn from that course to meet the terms of academic jeopardy. Provisional students may not be placed in academic jeopardy.

Additional details on the grade of C and academic standards for master’s degree and Doctor of Management students may be found on pp. 26–27.

**Dismissal**
A student in academic jeopardy who fails to raise his or her grade-point average to a 3.0 will be dismissed. A student who is dismissed is ineligible to register again for UMUC graduate courses.

**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.

Diploma and certificate applications must be received with the required fees, within the prescribed time limits. Backdated applications will not be accepted.

**Time Limit for Degrees**
All requirements established for the completion of a graduate degree program must be fulfilled within seven consecutive years (five years from beginning AMBA 601 for the Master of Business Administration). This regulation includes courses transferred from other institutions. Any transfer of credit must be completed within the five- or seven-year time frame applied toward the degree.

*Note:* Although doctoral students have seven years to complete their program, all coursework must be completed within four years in order to allow at least three years for the research project.

**Time Limit for Certificates**
Certificate programs that require up to 18 credits must be completed within three years; certificate programs that require more than 18 credits must be completed within five years.

**Degree Requirements**

In general, the UMUC degree and certificate requirements that apply to a student are those that were in effect when the student began continuous enrollment in the program. If a student has not been continuously enrolled, the requirements that apply are those in effect at UMUC when the student resumes continuous enrollment. To be considered continuously enrolled, students must be or have been enrolled at UMUC and have had no more than one year of nonenrollment. When a continuously enrolled student chooses to change his or her program, the student may be subject to the requirements in effect at the time of the change.

The requirements detailed under the individual programs are applicable to students who enroll on or after August 1, 2003.
Responsibilities of the Student

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 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.usm.edu/leadership/BoardOfRegents/Bylaws.

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 to be 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.

Examinations

The student is responsible for obtaining information about quizzes and examination schedules and policies.

Make-up examinations and tests may be given to students who for valid reasons are unable to take exams at the scheduled time. Teachers are not required to offer make-up examinations because of a student’s absence unless the student can present evidence that it was caused by unavoidable circumstances or occurred on a religious holiday.” In such cases, an examination may be rescheduled for the mutual convenience of student and teacher and must cover only the material for which the student was originally responsible. Such a rescheduling must not cause a conflict with the student’s other classes.

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 of credit per term. Fully employed students are limited to a maximum of 6 semester hours in the fall and spring semesters; during the summer term, students make take only 3 semester hours if attending on-site, but may take 6 semester hours of online coursework.

* The UMUC policy on religious holidays is stated in the chapter on University Policies.
Full-time students who are not employed during the summer or who work fewer than 20 hours a week (except those in the Master of Business Administration program) may request to take additional courses 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.

To be eligible for a course overload, a student must
- Be a degree- or certificate-seeking student
- Be employed no more than 20 hours a week
- Have no previous grades of C or F
- Have no current marks of I
- Have never been in academic jeopardy

Grievance/Appeal Procedure

Students having legitimate complaints about Graduate School faculty, staff members, 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 Vice Provost and Dean, Graduate School, at 800-888-UMUC, ext. 7200. More information is available online at www.umuc.edu/policy.

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/computer.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.

Applicants and students who require further training in the use of Internet services and basic software packages may wish to consult the UMUC Graduate Schedule of Classes or speak to a graduate advisor. The Schedule may be obtained by calling 800-888-UMUC and advisors may be reached at 800-888-UMUC, ext. 7939.

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.html.
Online Study

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 classroom-based and online courses.

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 home access. However, it should be regularly available and the student should have a current e-mail address.

WebTycho-Enhanced Section Classes
All Graduate School on-site classes use the university’s online course delivery system 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 classroom-based activity.

Online Classes
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; for example, students need to adhere to a 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 classroom meetings).
4. Online students need disciplined work habits, effective time management skills, and the ability to work both alone and collaboratively.

Technical Requirements
Note: Minimum technical requirements are subject to change. Current information about technical requirements is available at tychousa.umuc.edu/help.nsf/htm/media/technical_requirements.html. Students are responsible for their own phone line and Internet access costs.

Basic Technical Requirements
Technical requirements for using WebTycho for graduate courses include
- A computer running a compatible Web browser
- A connection to the Internet
- An e-mail account
- A sound card with speakers or headphones
- Sun Java VM
- Virus protection software (updated regularly)

Students should refer to their individual program of study for any additional technical requirements that are particular to the specific program.
Graduate Programs and Requirements

Graduate Study
Most students approach graduate study with an awareness that it is different from undergraduate study, that more will be expected of the student on an academic level, and that there are usually special requirements that must be completed at the end of the student’s program.

UMUC requires students to complete comprehensive exams only at the doctoral level.

Master’s degree students culminate their studies in a number of ways. A practicum experience is required for the Master of Arts in Teaching and for the Master of Science in management with a specialization in public relations. The Master of Business Administration requires a research project. For some programs (the Master of Science degrees in accounting and financial management, accounting and information technology, biotechnology studies, e-commerce, health care administration, information technology, management with a specialization in accounting, and telecommunications management and the Master of Software Engineering), an integrative capstone course is required at the end of the program. For others, students may be asked to complete a management project (described at right). This is required for the Master of Distance Education, but for other programs (the Master of International Management and the Master of Science degrees in computer systems management, environmental management, management,* and technology management) students are given the choice of completing two courses instead.

Other administrative and general academic requirements (e.g., time limits, academic progress) for the doctoral and master’s degrees are described on pp. 25–30.

Noncredit Courses
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. Most courses (except UCSP 610) last about eight weeks and earn continuing education units (CEUs). UCSP 610 is a self-paced tutorial, but it is expected that students will complete the course in fewer than 15 weeks.

Although these courses carry no UMUC credit, they appear on the students’ official academic transcript. At the successful conclusion of the course, a grade of P (Pass) is posted.

UMUC graduate students must be admitted or have an application on file before registering for noncredit courses.

Noncredit courses are designated UCSP and listed in the course descriptions (pp. 110–66). Current information about fees and scheduling for noncredit courses is available at www.umuc.edu/grad/noncred.html.

Note: No refunds are given for noncredit courses. Financial aid, the Golden ID program, and USM remission of fees may not be applied to noncredit courses.

Master’s Degree End-of-Program Options
For students in the Master of International Management program and the Master of Science programs in computer systems management, environmental management, management,* and technology management, the Graduate School has developed the following end-of-program options:

Option 1—Management Project
Students may choose to demonstrate their ability to structure and complete a major project that identifies and resolves an important management or organizational issue by completing a management project. Students who are able to arrange a meaningful assignment with their employers are encouraged to undertake this option. Since the management project is often an added value to the employer, students who are receiving tuition assistance may want to complete their degree programs with this beneficial assignment. For those who do, it is important to note that completion of the management project in one semester demands careful planning, dedication, discipline, and considerable support from the sponsoring organization. In the event that circumstances do not allow the project to be completed within one semester, one more 1-credit enrollment will be permitted. If the management project is not completed within the allotted two semesters, the student must switch to the two-course option.

Students who present their project and receive either an incomplete (I) or a failing grade (F) must successfully complete the management project option within the time allowed by policy.

* Except for those in the accounting, project management, and public relations tracks.
Students in this situation may not switch to the two-course option.

Those students who choose option 1 must develop and gain approval of a problem statement and prospectus, carry out the project, and present a final report. Students report the results of their efforts in written and oral form. The project may be developed in cooperation with a current employer or with some other organization of the student’s choice, provided there is no conflict of interest. The project must be conducted under the direction of a faculty advisor in cooperation with an on-site project supervisor.

All students entering the management project phase of their program must meet with their faculty advisors. The time limit for completing all degree requirements (detailed on p. 28) is strictly enforced.

Most management project courses for the individual disciplines are designated 690. (When taken for a second semester, the course is designated 690M.) Students with questions concerning enrollment in ADMN 690, CSMN 690, ENVM 690, IMAN 690, TLMN 690, or TMAN 690 should contact their departmental advisors at 800-888-UMUC, ext. 7200, or by e-mail (addresses are listed for each program on the following pages). Successful management project reports for all programs are available for review. Students should call 800-888-UMUC, ext. 7209, for library hours.

Option 2—Two-Course Option

Students may choose to expand their knowledge in their chosen fields by enrolling in two additional courses that complement their degree or career objectives. Course selections are identified according to program; however, students should nonetheless obtain prior approval of the two-course selection from the program director.
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 expanding their knowledge, skills, and abilities beyond the master’s degree level.

Overview

A Doctor of Management 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 the areas of 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 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 socioeconomic 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 the dissertation/doctoral project, students 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 two-part comprehensive exam must be completed within four years.
Program Requirements

To apply to the DM program, an applicant must have a master’s degree from a regionally accredited college or university with an overall GPA of 3.20 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 Graduate Record Examinations (GRE) general test or the General Management Admission Test (GMAT). The UMUC Graduate School reserves the right to request additional transcripts.

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

A complete list of the documents required is found in the “Instructions to the Applicant” in the DM application package and on the DM application form. Interested parties should contact the program office for an application form.

Formats/Locations

The Doctor of Management program is not available online. Regular visits to UMUC headquarters in Adelphi, Maryland, are required for class attendance and for completion of other portions of the program. 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 the student’s 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 predissertation 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 choosing 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. 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.

Requirements

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

Core Courses

Students must complete the following seminars:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMGT 701</td>
<td>The Philosophy and Methods of Scholarly Inquiry</td>
<td>9</td>
</tr>
<tr>
<td>DMGT 702</td>
<td>Technological Innovation for Global Leadership</td>
<td>9</td>
</tr>
<tr>
<td>DMGT 799</td>
<td>Dissertation Research</td>
<td>12</td>
</tr>
</tbody>
</table>

Breadth Courses

Depending on previous study, students must choose a course in each of the following six areas, with the consent of an advisor:

- International management
- Behavioral sciences
- Technology/information management
- Economics/finance
- Marketing
- Project management/assessment

Specialization Courses

Students must take three courses in any of the three areas of concentration:

- International operations
- Organizational processes
- Technology and information systems

Students must choose courses from the following list with the consent of an advisor and the departmental chair. Enhanced master’s degree courses (graduate-level courses in which assignments and objectives are customized for the doctoral student) or up to 6 credits of doctoral-level courses from other regionally accredited universities may also be applied to this requirements, with departmental approval.

Course descriptions are found on pp. 110–56.
DMGT 781 Advanced Topics in Technology Management (3)
DMGT 783 Advanced Topics in Technology and Information Systems (3)
DMGT 785 Futures and Change Management (3)
DMGT 787 Advanced Topics in International Management (3)
DMGT 790 Special Topics (3)
DMGT 795 Independent Studies in Selected Knowledge Area (3)
DMGT 797 Independent Studies in Selected Problem Area (3)

Research Methods Course(s)
Students must complete at least 3 semester hours in research methods. Depending on the student’s specialization track, he or she may be required to complete 6 semester hours in research methods.

DMGT 711 Quantitative Research Methods (3)
DMGT 712 Qualitative Research Methods (3)

Comprehensive Examination
Upon successful completion of all coursework, a student must demonstrate mastery of all the breadth areas and core seminars (i.e., DMGT 701 and 702) by passing a two-part comprehensive examination before advancing to the doctoral dissertation.

Dissertation/Doctoral Project
A dissertation/doctoral project 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 mastery of the special field of study and of the materials and techniques used in his or her research. As a unique feature of the DM 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. The model for the dissertation 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 “layperson’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 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 paper 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.

Candidates then develop a fully integrated dissertation, incorporating the aforementioned three papers and documenting what they have learned from the papers. The research is then presented before the Dissertation Research Committee and members of the academic community at a colloquium.
Master’s Degree Programs

Master of Arts in Teaching

The Master of Arts in Teaching (MAT) is designed for students who hold a bachelor’s degree or higher who wish to earn teaching certification. Successful completion of the program entitles a candidate to recommendation for Maryland teaching certification at the secondary level in a specific subject area. Secondary certification options are available in the following subject areas: biology, chemistry, computer science, earth/space science, mathematics, physical science, and physics.

Overview

The MAT program is a 36-credit program that includes an internship lasting 100 consecutive school days in a public school setting. The program is available for both full-time and part-time students. All degree requirements, with the exception of the internship, may be completed at a distance.

Program Requirements

In addition to the general requirements (listed on p. 11), candidates must have either a baccalaureate degree or evidence of a strong background (by having earned a requisite number of credits) in a subject area appropriate for the desired certification. Candidates must also have a 3.0 GPA overall and in the subject area. An official transcript analysis of previous coursework is required for all applicants. Additional undergraduate coursework in the teaching field may be required to meet certification standards.

Candidates must also pass the state of Maryland’s requirements on the Praxis I exam with the following minimum scores on either the Pre-Professional Skills Test (PPST) or the Computer Pre-Professional Skills Test (CPPST): 177 in reading, 173 in writing, 177 in mathematics, or 527 total. Candidates who took the computer-based test before January 2002 must have scored 325 in reading, 319 in writing, 322 in mathematics, or 966 total. Information on 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.us/Fact%20Sheets/fact44.html. Praxis registration can be found at www.ets.org/praxis.

Provisional Status

Provisional admission status for the MAT may be granted to students who fall slightly below the minimum grade-point requirement for degree status.
Formats/Locations
All MAT classes, with the exception of the internship, are available online only.

Curriculum Requirements
Noncredit Course
All degree-seeking students are required to complete the non-credit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Core Courses
Students must complete the following courses:
OMAT 601 The Contemporary School (3)
OMAT 602 Adolescent Growth and Development (3)

Course Sequencing
OMAT 601 is the recommended first course for students in the MAT program.

OMAT 603 Curriculum, Instruction, and Assessment (6)
OMAT 604 Subject Area Methods (3)
OMAT 605 The Diverse Learner (3)
OMAT 606 Internship with Seminar (9)
OMAT 607 Secondary Reading I (3)
OMAT 608 Secondary Reading II (3)
OMAT 609 Technology in Teaching and Learning (3)
Master of Business Administration

This program is designed in both an online and combination online and on-site 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.

Overview

The 43-credit online MBA program consists of one 1-credit foundation course and seven 6-credit seminars, each of which is 13 weeks long with three or four weeks off between seminars. Each student is assigned to a cohort of approximately 25 students that continue together through completion of their MBA program.

Program Requirements

General requirements are listed on p. 11. Students who have taken the GMAT (optional) within the last two years and scored 600 or above need not take AMBA 600 and may enroll directly in AMBA 601 upon acceptance. Also, students with graduate coursework in business from an accredited university may be eligible to waive AMBA 600. (Information on transfer credit is on p. 18.)

Decision-Pending Status

Students may enroll in AMBA 600 before UMUC has received the official transcript from the bachelor’s-degree-granting institution. Students must receive an admission decision before subsequent enrollments.

Formats/Locations

The MBA is offered entirely through online study and in a combination format that mixes online and classroom study. (Note: Courses offered in the combination format are indicated by a letter C after the course number.) Students with more than five years managerial experience may also earn the MBA through an accelerated executive program (described on p. 92). Students should check the current Graduate Schedule of Classes to determine when courses will be offered at specific locations.

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 e-commerce, or Master of Science in management. These degree programs are offered either online or in a combination of online and classroom-based study. More information is available on pp. 80–91.
**Curriculum Requirements**

**Noncredit Course**
All degree-seeking students are required to complete the non-credit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

**Core Courses**
Students must complete the following courses:

- AMBA 600/600C MBA Fundamentals (1)
- AMBA 601/601C The Role of Managers and Organizations in Society (6)

- AMBA 602/602C The Dynamics of Individuals and Groups in Work Organizations (6)
- AMBA 603/603C The Marketing of New Ideas (6)
- AMBA 604/604C Technology and Operations Management (6)
- AMBA 605/605C The Economics of Management Decisions (6)
- AMBA 606/606C Organizations and the External Environment (6)
- AMBA 607/607C Strategic Management (6)
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; 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.

Overview

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 core courses, four elective courses, and one final required project.

Program Requirements

Decision-Pending Status

Students may enroll in OMDE 601 before UMUC has received the official transcript from the bachelor’s-degree-granting institution. Students must receive an admission decision before subsequent enrollments.

Formats/Locations

Courses in the MDE program are currently available online only.

Partnership with Oldenburg University

This program is offered in partnership with Carl von Ossietzky University of Oldenburg, Germany, a leading German institution with extensive experience in distance education. More information on this academic partnership is on p. 9.
Curriculum Requirements

Noncredit Course
All degree-seeking students are required to complete the non-credit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Core Courses
Students must complete the following courses:

OMDE 601 Foundations of Distance Education (3)
OMDE 602 Distance Education Systems (3)
OMDE 603 Technology in Distance Education (3)
OMDE 604 The Management of Distance Education 2: Leadership in Distance Education (3)
OMDE 606 The Management of Distance Education 1: Cost Analysis (3)
OMDE 607 Instructional Design and Course Development in Distance Education (3)
OMDE 608 Student Support in Distance Education and Training (3)

Elective Courses
Students must choose four of the following courses:

OMDE 611 Distance Education Library Services (3)
OMDE 614 Intellectual Property and Copyright in Distance Education (3)
OMDE 620 Learning and Training with Multimedia (3)
OMDE 621 Training at a Distance (3)
OMDE 622 The Business of Distance Education (3)
OMDE 623 Web-Based Learning and Teaching and the Virtual University (3)
OMDE 625 National and International Policies for Distance Education in Developing Countries (3)
OMDE 626 Technologies for Distance Education in Developing Countries (3)
OMDE 631 Advanced Technology in Distance Education 1–Synchronous Learning Systems (3)
OMDE 632 Advanced Technology in Distance Education 2–Asynchronous Learning Systems (3)

End-of-Program Course
Students must complete the following course:

OMDE 690 Distance Education Portfolio and Project (3)
Master of Education

The Master of Education (MEd) with a specialization in instructional technology is designed for professionally certified teachers in grades pre-kindergarten to 12 and other professional educators.* This degree program provides the knowledge and skills to incorporate technology effectively into curricula, to develop content expertise in current and emerging instructional technologies, to gain a broad understanding of the role of technology in the contemporary school, and to lead change efforts at the classroom or school levels—all within the context of pre-K through grade 12 instruction.

Three program goals are associated with this program:

■ 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 effectiveness in advancing student learning.

■ Technological Applications

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.

Overview

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 eight core courses, two elective courses, and an end-of-program course.

* Students seeking initial state licensure to teach should refer to the Master of Arts in Teaching (p. 37) or the Resident Teacher Certification Program (p. 108).
Program Requirements

Decision-Pending Status
Students may enroll in OMED 600 before UMUC has received the official transcript from the bachelor’s-degree-granting institution. Students must receive an admission decision before subsequent enrollments.

Formats/Locations
Courses in the MEd program are currently available online only.

Curriculum Requirements

Noncredit Course
All degree-seeking students are required to complete the noncredit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Core Courses
Students must complete the following courses:
OMED 600 Foundations of Technology in Teaching and Learning (3)
OMED 610 Digital Information Literacy for K–12 Educators (3)
OMED 620 Web-Based Learning and Teaching: Design and Pedagogy (3)
OMED 630 Technology in K–12 Education: Synchronous, Asynchronous, and Multimedia Technologies (3)
OMED 640 Using Technology for Instructional Improvement (3)
OMED 650 Hardware and Software in Instructional Development (3)
OMED 660 Administration of Technology Initiatives: Planning, Budgeting, and Evaluation (3)
OMED 670 Technology Change Management in Schools (3)

Elective Courses
Students must choose two courses from the following:
- OMED 690 Special Topics in Instructional Technology (3)
- Courses in the Master of Arts in Teaching; Master of Distance Education; Master of Science in computer systems management, information technology, or telecommunications management; or Master of Software Engineering programs

The MEd program director must approve elective course selections except for OMED 690. Courses from additional program areas may be approved on a case-by-case basis.

End-of Program Course
Students must complete the following course:
OMED 680 Integrative Capstone Project (3)

Course Sequencing
OMED 600 and 610 are required as the first two courses for MEd students.

Course descriptions are found on pp. 110–56.
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 (MIM) is an innovative, graduate-level management degree program developed to help midcareer 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.

Overview

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 core courses, four track courses, and an end-of-program option. The program has four areas of specialization:

- Energy resources management and policy
- International commerce
- International finance
- International marketing

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 MIM 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 MIM curriculum (regional economics, trade, business, and so forth). Other students interested in area studies should consider IMAN 661.

Program Requirements

Decision-Pending Status

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, IMAN 605, IMAN 610, IMAN 625, or either ADMN 630 or ADMN 631. Students must receive an admission decision before subsequent enrollments.
Formats/Locations

Classes in the MIM program are currently offered online and at Adelphi. Students should check the current Graduate Schedule of Classes to determine when courses will be offered at specific locations.

Students who first complete the entire MIM degree program and meet all requirements for graduation will be eligible to earn an MBA, in either the regular or executive format, with only an additional 18–24 semester hours of coursework. The MBA is offered either online or in a combination of online and classroom-based study. More information on the dual degree program is on p. 80. Executive dual degree programs are described on pp. 95–96.

Curriculum Requirements

Noncredit Course
All degree-seeking students are required to complete the non-credit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Core Courses
Students must complete the following courses:

- IMAN 601 Strategic Management in a Global Environment (3)
- IMAN 605 Intercultural Communication and Leadership (3)
- IMAN 610 Economics in a Global Context (3)
- IMAN 615 Foreign Investment and Strategic Alliances (3)
- IMAN 625 International Trade and Trade Policy (3)
- IMAN 650 Managing Overseas Operations (3)

Students in the international finance track must complete the following courses:

- ADMN 631 Financial Management in Organizations (3)

Students in all other tracks must complete one of the following course:

- ADMN 630 Financial Decision Making for Managers (3)
- ADMN 631 Financial Management in Organizations (3)

Specialty Track Courses

Energy Resources Management and Policy
Students in the energy resources management and policy track must choose four of the following courses:

- ENER 601 Energy Resources (3)
- ENER 602 Energy Economics (3)
- ENER 603 Energy Infrastructure Management (3)
- ENER 604 New Technologies in Energy Management (3)
- ENER 646 Environmental/Energy Law and Policy Development (3)

International Commerce
Students in the international commerce track must complete the following courses:

- IMAN 630 International Financial Management (3)
- IMAN 635 Managing Country Risk (3)
- IMAN 640 International Marketing Management (3)
- IMAN 645 The International Legal and Tax Environment (3)

International Finance
Students in the international finance track must complete the following courses:

- ADMN 639 Multinational Financial Management (3)
- IMAN 645 The International Legal and Tax Environment (3)

Students in the international finance track must complete two of the following courses:

- ADMN 632 Financial Management of Current Operations (3)
- ADMN 633 Capital Markets, Institutions, and Long-Term Financing (3)
- ADMN 634 Investment Valuation (3)
**International Marketing**

Students in the international marketing track must complete the following courses:

- IMAN 620  International Marketing Research and Analysis (3)
- IMAN 630  International Financial Management (3)
- IMAN 640  International Marketing Management (3)

Students in the international marketing track must complete one of the following courses:

- ADMN 687  Market Segmentation and Penetration (3)
- ECOM 620  E-Marketing (3)

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**End-of-Program Option**

Students must choose one of two end-of-program options:

- IMAN 690  Management Project (3)
- One interdisciplinary breadth course—chosen from ADMN 626, ADMN 628, ADMN 638, ADMN 655 (for international finance track students only), ADMN 662, ADMN 664, ADMN 665, CSMN 601, TLMN 602, TMAN 632, or TMAN 640—and one elective/depth course chosen, according to specialty track, from the following:
  
  **Energy Resource Management and Policy Track:** Remaining course from track
  
  **International Commerce Track:** CSMN 601, ECOM 620, IMAN 661,* TMAN 632, TMAN 633, or TMAN 640
  
  **International Finance Track:** IMAN 635, IMAN 640, or IMAN 661*
  
  **International Marketing Track:** IMAN 635, IMAN 645, or IMAN 661*

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* Includes a trip to Europe.
Master of Science in Accounting and Financial Management

The Master of Science (MS) 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 MS 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. Upon completion of this program, graduates will exceed the minimum number of required credits to sit for the Certified Public Accountant (CPA) exam.

Overview

This 36-credit program is composed of five accounting courses, five financial management courses, a breadth course from a related field, and an integrative capstone course.

Program Requirements

In addition to the general admission requirements (listed on p. 11), candidates for this program are required to have completed at least 15 semester hours of coursework in accounting, with a C or better in each course.

Provisional Status

Students may be given provisional status if they have not completed sufficient accounting coursework to satisfy the 15 credits of accounting to qualify for 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.

Decision-Pending Status

Students may enroll in ADMN 631 before UMUC has received the official transcript from the bachelor’s-degree-granting institution. Students must receive an admission decision before subsequent enrollments.
Formats/Locations

Courses in accounting are offered online only. Financial management courses are offered in both online and classroom formats. 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.

Students who first complete the entire MS in accounting and financial management degree program and meet all requirements for graduation will be eligible to earn either an MIM or an MS in management with only an additional 18 semester hours of coursework. More information on the dual degree programs is on p. 80–91.

Curriculum Requirements

Noncredit Course

All degree-seeking students are required to complete the noncredit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Accounting Courses

Students must complete the following courses:

ACCT 608 Fraud Detection and Accounting Ethics (3)
ACCT 610 Financial Accounting (3)
ACCT 614 Accounting Information Systems (3)

Students must complete two of the following courses:

ACCT 609 E-Commerce Accounting (3)
ACCT 611 Management Accounting (3)
ACCT 612 Auditing Process (3)
ACCT 613 Federal Income Taxation (3)

Financial Management Courses

Students must complete the following courses:

ADMN 631 Financial Management in Organizations (3)
ADMN 632 Financial Management of Current Operations (3)
ADMN 633 Capital Markets, Institutions, and Long-Term Financing (3)
ADMN 634 Investment Valuation (3)
ADMN 639 Multinational Financial Management (3)

Breadth Course

Students must choose one of the following courses:

ECOM 620 E-Marketing (3)
ECOM 630 Information Risk Assessment and Security Management (3)
ECOM 640 Internet Principles and Applications (3)
ECOM 660 E-Commerce Financial Management and Accounting (3)
ECOM 670 Social, Legal, Ethical, and Regulatory Issues (3)
IMAN 601 Strategic Management in a Global Environment (3)
IMAN 610 Economics in a Global Context (3)
IMAN 625 International Trade and Trade Policy (3)
IMAN 635 Managing Country Risk (3)
IMAN 640 International Marketing Management (3)
IMAN 661 Business Strategies for Europe (3)
TMAN 632 Organizational Performance Management (3)
TMAN 640 Project Management (3)

Capstone Course

Students must complete the following course:

ADMN 619 Financial Management and Accounting Capstone (3)
Master of Science in Accounting and Information Technology

The Master of Science (MS) 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 on the design and development of systems specifications, selection and implementation of enterprise systems, and their applications (electronic commerce, activity-based costing modules, data warehouses, standard financial modules).

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. Upon completion of this program, graduates will exceed the minimum number of required credits to sit for the Certified Public Accountant (CPA) exam.

Overview

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

Program Requirements

In addition to the general admission requirements (listed on p. 11), candidates for this program are required to have completed at least 15 semester hours of coursework in accounting with a C or better in each course.

Provisional Status

Students may be given provisional status if they have not completed sufficient accounting coursework to satisfy the 15 credits of accounting to qualify for 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.

Decision-Pending Status

Students may enroll in ADMN 641 before UMUC has received the official transcript from the bachelor’s-degree-granting institution. Students must receive an admission decision before subsequent enrollments.
Technology Elective Courses
Students must choose two of the following courses:
- CSMN 635 Systems Development and Project Control (3)
- CSMN 636 Telecommunications and Connectivity (3)
- CSMN 655 Information Risk Assessment and Security Management (3)

or
- ECOM 630 Information Risk Assessment (3)
- CSMN 661 Relational Database Systems (3)
- ITSM 637 IT Acquisitions Management (3)

Breadth Elective Course
Students must choose one of the following courses:
- ADMN 622 Integrative Supply Chain Management (3)
- ECOM 620 E-Marketing (3)
- ECOM 640 Internet Principles and Applications (3)
- ECOM 660 E-Commerce Financial Management and Accounting (3)
- ECOM 670 Social, Legal, Ethical, and Regulatory Issues (3)
- IMAN 601 Strategic Management in a Global Environment (3)
- IMAN 610 Economics in a Global Context (3)
- IMAN 625 International Trade and Trade Policy (3)
- IMAN 635 Managing Country Risk (3)
- IMAN 640 International Marketing Management (3)
- IMAN 661 Area Studies: Business Strategies for Europe (3)*
- TMAN 614 Strategic Management of Technology and Innovation (3)
- TMAN 632 Organizational Performance Management (3)

Capstone Course
Students must complete the following course:
- ADMN 618 Accounting and Information Technology Capstone (3)

Formats/Locations
Courses in accounting are offered online only. Management information systems and computer systems management courses are offered in both online and on-site formats. 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.

Students who first complete the entire MS in accounting and information technology degree program and meet all requirements for graduation will be eligible to earn an MS in either accounting and financial management or management with only an additional 18 semester hours of coursework. More information on the dual degree programs is on p. 80–91.

Curriculum Requirements
Noncredit Course
All degree-seeking students are required to complete the noncredit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Accounting Courses
Students must complete the following courses:
- ACCT 608 Fraud Detection and Accounting Ethics (3)
- ACCT 610 Financial Accounting (3)
- ACCT 614 Accounting Information Systems (3)

Students must complete two of the following courses:
- ACCT 609 E-Commerce Accounting (3)
- ACCT 611 Management Accounting (3)
- ACCT 612 Auditing Process (3)
- ACCT 613 Federal Income Taxation (3)

Management Information Systems Courses
Students must complete the following courses:
- ADMN 641 Information Systems Management and Integration (3)
- ADMN 643 Systems Analysis and Design (3)
- ADMN 645 Information Technology, the CIO, and Organizational Transformation (3)

* Includes a trip to Europe.

Course descriptions are found on pp. 110–56.
The Master of Science (MS) 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 MS in biotechnology studies will have increased knowledge of bioinformatics.

Overview
The program leads to an MS in biotechnology studies. The curriculum requires 36 credits of coursework and is divided into a 24-credit core and 12 credits of electives. A specialty track in bioinformatics practice is available.

Program Requirements
Some background in biology is recommended.

Decision-Pending Status
Students may enroll in BIOT 640 before UMUC has received the official transcript from the bachelor’s-degree-granting institution. Students must receive an admission decision before subsequent enrollments.

Formats/Locations
Classes in the MS in biotechnology studies are offered online and at College Park and the Shady Grove Center. Students should check the current Graduate Schedule of Classes to determine when courses will be offered at specific locations.
**Curriculum Requirements**

**Noncredit Course**
All degree-seeking students are required to complete the non-credit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

**Core Courses**
Students must complete the following courses:

- **BIOT 610** Introduction to Bioinformatics (3)
- **BIOT 640** Societal Issues in Biotechnology (3)
- **BIOT 641** Commercializing Biotechnology in Early-Stage Ventures (3)
- **BIOT 642** The Selection and Evaluation of Biotechnology Projects (3)
- **BIOT 643** The Techniques of Biotechnology (3)
- **BIOT 644** The Regulatory Environment of Biotechnology (3)
- **BIOT 645** The Business of Biotechnology (3)

**Elective Courses**
Students must choose four of the following courses:

- **TMAN 610** Economics and Financial Analysis (3)
- **TMAN 611** Principles of Technology Management (3)
- **TMAN 612** Financial Management for Technology Managers (3)
- **TMAN 613** Marketing Technology-Based Products and Services (3)
- **TMAN 614** Strategic Management of Technology and Innovation (3)
- **TMAN 632** Organizational Performance Management (3)
- **TMAN 633** Managing People in Technology-Based Organizations (3)
- **TMAN 640** Project Management (3)
- **TMAN 661** Systems Development and Management (3)

**Capstone Course**
Students must complete the following course:

- **BIOT 671** Capstone (3)

**Track in Bioinformatics Practice**
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 (e.g., molecular biology, biostatistics, algorithms, bioinformatics, and visualization) at the interface between these two fields. Interested students should contact the program director at 800-888-UMUC, ext. 7824, for more information.

**Core Courses**
Students must complete the following courses:

- **BIOT 610** Introduction to Bioinformatics (3)
- **BIOT 613** Statistical Processes for Biotechnology (3)
- **BIOT 615** Relational Database Systems (3)
- **BIOT 616** Data Structures and Algorithms (3)
- **BIOT 617** Advanced Bioinformatics (3)

**Elective Courses**
Students must choose six elective courses from the MS in biotechnology studies program.

**Capstone Course**
Students must complete the following course:

- **BIOT 671** Capstone (3)

**Course Sequencing**
Students should take BIOT 640 first and all other courses in ascending numerical order. Students who cannot take courses in the required sequence should contact the program director for approval of an alternate course plan.

Course descriptions are found on pp. 110–56.
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 (MS) in computer systems management 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.

Overview

In each segment of this 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 requires 36–39 credits and consists of five core courses, three to five track courses, one to three electives, and an end-of-program option.

Students may choose one of five tracks:

- Applied computer systems
- Database systems technologies
- Information assurance
- Information resources management
- Software development management

Agreement with National Defense University

More information on UMUC’s partnership with National Defense University is on p. 9.

Program Requirements

Decision-Pending Status

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: CSMN 601, TMAN 610, or TMAN 632. Students must receive an admission decision before subsequent enrollments.
Technology Requirements

Students pursuing a degree in any of the information technology fields (computer systems management, information technology, telecommunications management, and software engineering) must have access to a computer and modem capable of supporting current software. Such programs may require more than the minimum hardware and software needed for basic online communication and study (listed on p. 31).

In addition, students in the database systems technologies, information resource management, and software development management tracks are also required to have access to a computer with the following features:

- At least 256 MB RAM (512 MB preferred)
- At least 5 GB disk space
- Windows 2000 or later
- 56 KB modem or better (e.g., broadband)
- CD burner
- Telnet and FTP service (via their ISP)
- Compression software (e.g., WinZip)
- FTP software
- Media software (e.g., RealOne Player)

Formats/Locations

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

Curriculum Requirements

Noncredit Course

All degree-seeking students are required to complete the non-credit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Core Courses

Students must complete the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSMN 601</td>
<td>Issues, Trends, and Strategies for Computer Systems Management</td>
<td>(3)</td>
</tr>
<tr>
<td>TMAN 610</td>
<td>Economics and Financial Analysis</td>
<td>(3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMAN 614</td>
<td>Strategic Management of Technology and Innovation</td>
<td>(3)</td>
</tr>
<tr>
<td>TMAN 632</td>
<td>Organizational Performance Management</td>
<td>(3)</td>
</tr>
<tr>
<td>ITSM 670</td>
<td>Information Technology Integration and Applications</td>
<td>(3)</td>
</tr>
</tbody>
</table>

Track Courses

Applied Computer Systems

Students in the applied computer systems track must complete the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSMN 615</td>
<td>Hardware and Operating Systems</td>
<td>(3)</td>
</tr>
<tr>
<td>CSMN 616</td>
<td>Distributed Computing</td>
<td>(3)</td>
</tr>
<tr>
<td>CSMN 617</td>
<td>Principles of Programming Languages</td>
<td>(3)</td>
</tr>
<tr>
<td>CSMN 618</td>
<td>Knowledge-Based Systems</td>
<td>(3)</td>
</tr>
</tbody>
</table>

Database Systems Technologies

Students who have previous work experience or undergraduate credits in database systems should contact the program director to see if they qualify for advanced standing.

Students who do not have advanced standing must complete the following course:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSMN 661</td>
<td>Relational Database Systems</td>
<td>(3)</td>
</tr>
</tbody>
</table>

All students in the database systems technologies track must complete the following course:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSMN 662</td>
<td>Advanced Relational/Object-Relational Database Systems</td>
<td>(3)</td>
</tr>
</tbody>
</table>

Students in the database systems technologies track who do not have advanced standing must choose three of the following courses; students with advanced standing must choose four.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSMN 663</td>
<td>Distributed Database Management Systems</td>
<td>(3)</td>
</tr>
<tr>
<td>CSMN 664</td>
<td>Object-Oriented Database Systems</td>
<td>(3)</td>
</tr>
<tr>
<td>CSMN 665</td>
<td>Data Warehouse Technologies</td>
<td>(3)</td>
</tr>
<tr>
<td>CSMN 666</td>
<td>Database Systems Administration</td>
<td>(3)</td>
</tr>
<tr>
<td>CSMN 667</td>
<td>Data Mining</td>
<td>(3)</td>
</tr>
<tr>
<td>CSMN 668</td>
<td>Database Security</td>
<td>(3)</td>
</tr>
</tbody>
</table>

Course descriptions are found on pp. 110–56.
Information Assurance

Students in the information assurance track must complete the following courses:

- CSMN 655 Information Risk Assessment and Security Management (3)
- CSMN 681 Cryptology and Data Protection (3)
- CSMN 683 Intrusion Detection, Incident Response, and Computer Forensics (3)
- CSMN 685 Security Policy, Ethics, and the Legal Environment (3)
- TLMN 672 Network and Internet Security (3)

Information Resources Management

Students in the information resource management track must complete the following courses:

- CSMN 635 Systems Development and Project Control (3)
- CSMN 636 Telecommunications and Connectivity (3)
- ITSM 637 IT Acquisitions Management (3)

Software Development Management

Students in the software development management track must complete the following courses:

- MSWE 645 System and Software Standards and Requirements (3)
- MSWE 646 Software Design and Implementation (3)
- MSWE 647 Software Verification and Validation (3)
- MSWE 648 Software Maintenance (3)

Elective Courses

Students must choose elective courses from the following to complete the required number of credits for the degree program. Students in the database systems technologies and information assurance tracks choose one elective; students in the applied computer systems and software development management tracks choose two electives; students in the information resources management track choose three electives.

- ADMN 644 Decision Support Systems and Expert Systems (3)
- ADMN 645 Information Technology, the CIO, and Organizational Transformation (3)
- MSWE 645 System and Software Standards and Requirements (3)
- MSWE 646 Software Design and Implementation (3)
- MSWE 647 Software Verification and Validation (3)
- MSWE 648 Software Maintenance (3)
- Any CSMN course
- Any TLMN course
- Any TMAN course

End-of-Program Option

Students must choose one of two end-of-program options:

- CSMN 690 Management Project (3)
- One interdisciplinary course—chosen from ADMN 625, ADMN 635, ADMN 638, ECOM 610, ECOM 620, ECOM 670, IMAN 601, IMAN 625, IMAN 635, IMAN 661,* or TMAN 633, and one depth course—chosen from MSWE 645, MSWE 646, MSWE 647, MSWE 648, or any CSMN or TLMN course

* Includes a trip to Europe.
Master of Science in E-Commerce

The Master of Science (MS) in e-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.

Overview

This 36-credit degree program leads to the degree of Master of Science in e-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.

Agreement with Capitol College

Information on UMUC’s transfer agreement with Capitol College is on p. 9.

Program Requirements

Decision-Pending Status

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 or ECOM 620. Students must receive an admission decision before subsequent enrollments.

Formats/Locations

Courses in e-commerce are currently offered online only. Elective courses may be available at locations in the metropolitan Washington, D.C., area. Students should check the current Graduate Schedule of Classes to determine when courses will be offered at specific locations.

Students who first complete the entire MS in e-commerce degree program and meet all requirements for graduation will be eligible to earn an MBA, in either the regular or executive format, with only an additional 18–24 semester hours of coursework. The MBA is offered online. More information on the dual degree program is on p. 86. Executive dual degree programs are described on pp. 95–96.
Curriculum Requirements

Noncredit Course
All degree-seeking students are required to complete the non-credit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Core Courses
Students must complete the following courses:
ECOM 610 Introduction to E-Commerce (3)
ECOM 620 E-Marketing (3)
ECOM 630 Information Risk Assessment and Security Management (3)
ECOM 640 Internet Principles and Applications (3)

ECOM 650 E-Commerce Applications and Operations (3)
ECOM 660 E-Commerce Financial Management and Accounting (3)
ECOM 670 Social, Legal, Ethical, and Regulatory Issues (3)
ECOM 680 E-Commerce Application Software (3)

Elective Courses
Electives may be chosen from existing UMUC graduate courses. Students should contact the program director at 800-888-UMUC, ext. 7200.

Capstone Course
Students must complete the following capstone course:
ECOM 690 E-Commerce Capstone (3)

Course descriptions are found on pp. 110–56.
Master of Science in Environmental Management

The Master of Science (MS) 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.

Overview

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 requires 36–39 credits and consists of seven core courses, four elective courses, and an end-of-program option. A specialty track in energy resources management and policy and a concentration in environmental business are available.

Program Requirements

In addition to the general requirements (listed on p. 11), students in this program must have earned their bachelor’s degree in social science, physical science, biological science, or engineering, with a minimum of 3 credits each in chemistry and biology; and have a minimum of one year of experience or other evidence of expertise in the environmental field.

Provisional Status

Applicants who have not completed 6 credits 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 two courses chosen from the following list while completing the requirement in chemistry and biology: ENVM 641, ENVM 643, ENVM 646, or TMAN 640.

Decision-Pending Status

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.
Formats/Locations

Classes in the MS in environmental management are offered online and at College Park and the Shady Grove Center. Students should check the current Graduate Schedule of Classes to determine when courses will be offered at specific locations.

Curriculum Requirements

Noncredit Course

All degree-seeking students are required to complete the noncredit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Core Courses

Students must complete the following courses:

- ENVM 641 Environmental Auditing (3)
- ENVM 643 Environmental Communications and Reporting (3)
- ENVM 646 Environmental/Energy Law and Policy Development (3)
- ENVM 647 Environmental Risk Assessment (3)
- ENVM 670 Seminar in Environmental Management (3)
- TMAN 610 Economics and Financial Analysis (3)
- TMAN 640 Project Management (3)

Elective Courses

No Track or Concentration

Students who are not pursuing a track or concentration must choose four of the following courses:

- ENVM 644 New Technologies in Environmental Management (3)
- ENVM 645 Hazardous Materials Transportation (3)
- ENVM 648 Fundamentals of Environmental Systems (3)
- ENVM 649 Principles of Waste Management and Pollution Control (3)
- ENVM 650 Land and Water Resource Management (3)
- ENVM 651 Watershed Planning Management (3)

Track in Energy Resources Management and Policy

Students in the energy resources and policy track must complete the following track courses in lieu of four environmental electives:

- ENER 601 Energy Resources (3)
- ENER 602 Energy Economics (3)
- ENER 603 Energy Infrastructure Management (3)
- ENER 604 New Technologies in Energy Management (3)

Students in the energy resources and policy track must also complete one of the following courses:

- ENVM 644 New Technologies in Environmental Management (3)
- ENVM 651 Watershed Planning Management (3)

Concentration in Environmental Business

Students may take the following cluster of four TMAN courses in lieu of four environmental electives for a concentration in environmental business:

- TMAN 613 Marketing Technology-Based Products and Services (3)
- TMAN 614 Strategic Management of Technology and Innovation (3)
- TMAN 632 Organizational Performance Management (3)
- TMAN 633 Managing People in Technology-Based Organizations (3)

End-of-Program Option

Students must choose one of two end-of-program options:

- ENVM 690 Management Project (3)
- One interdisciplinary breadth course—chosen from ADMN 625, ADMN 628, IMAN 615, IMAN 661,* TMAN 632, or TMAN 633—and any other elective in the MS in environmental management program

* Includes a trip to Europe.
Master of Science in Health Care Administration

UMUC offers a 36-credit degree program leading to the Master of Science (MS) in health care administration. 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. Updated information on the MS in health care administration program is available online at www.umuc.edu/grad/hcad.

Overview

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 core courses, six required courses, one elective course, and a capstone course.

Program Requirements

Decision-Pending Status

Students may enroll in HCAD 600 before UMUC has received the official transcript from the bachelor’s-degree-granting institution. Students must receive an admission decision before subsequent enrollments.

Formats/Locations

Classes in the MS in health care administration are offered online and at College Park and the Shady Grove Center. 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.

Students who first complete the entire MS in health care administration degree program and meet all requirements for graduation will be eligible to earn an MBA, in either the regular or executive format, with only an additional 18–24 semester hours of coursework. The MBA is offered online. More information on the dual degree program is on p. 88. Executive dual degree programs are described on pp. 95–96.
Curriculum Requirements

Noncredit Course
All degree-seeking students are required to complete the non-credit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Core Courses
Students must complete the following courses:
- ADMN 625 Organizational Communication and Group Development (3)
- ADMN 635 Organizational Leadership and Decision Making (3)
- ADMN 638 Research Methods for Managers (3)

Students must complete one of the following courses:
- ADMN 630 Financial Decision Making for Managers (3)
- ADMN 631 Financial Management in Organizations (3)

Required Courses
Students must complete the following courses:
- HCAD 600 Introduction to Health Care Administration (3)
- HCAD 610 Information Technology for Health Care Administration (3)
- HCAD 620 The U.S. Health Care System (3)
- HCAD 640 Financial Management for Health Care Organizations (3)
- HCAD 650 Legal Aspects of Health Care Administration (3)
- HCAD 660 Health Care Institutional Organization and Management (3)

Elective Course
Students must take one of the following courses:
- HCAD 630 Public Health Administration (3)
- HCAD 670 Long-Term Care Administration (3)
- HCAD 680 Special Topics in Health Care Administration (3)

Capstone Course
Students must take the following course:
- HCAD 690 Capstone Course for Health Care Administration (3)

Course Sequencing
Students must complete HCAD 600 and ADMN 625 (or ADMN 635) within the first 9 semester hours of enrollment in the program.
Master of Science in Information Technology

The Master of Science (MS) in information technology program 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 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.

Overview

This 36-credit degree program leads to a Master of Science (MS) in information technology. The curriculum is divided into 18 credits in core courses, 15 credits in electives, and a 3-credit capstone course. The core curriculum consists of six technical courses in basic technology, computing, software, telecommunications, systems engineering, and the Internet. The capstone course covers 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 subdisciplines or course groups. Certain management electives are also available for students who may be on the management track in their organizations.

Program Requirements

In addition to the general admission requirements (listed on p. 11), candidates for this program are required to have earned their bachelor’s degree in one of the engineering, physical science, or mathematical disciplines and have substantive practical experience in information technology.

Decision-Pending Status

Students may enroll in either MSIT 610 or MSIT 660 before UMUC has received the official college transcript from the bachelor’s-degree-granting institution.

Technology Requirements

Students pursuing a degree in any of the information technology fields (computer systems management, information technology, telecommunications management, and software engineering) must have access to a computer and modem capable of supporting current software. Such programs may require more than the minimum hardware and software needed for basic online communication and study (listed on p. 31).
In addition, students are also required to have access to a computer with the following features:

- At least 256 MB RAM (512 MB preferred)
- At least 5 GB disk space
- Windows 2000 or later
- 56 KB modem or better (e.g., broadband)
- CD burner
- Telnet and FTP service (via their ISP)
- Compression software (e.g., WinZip)
- FTP software
- Media software (e.g., RealOne Player)

**Formats/Locations**

Classes in the MS in information technology program are offered online and at College Park and the Shady Grove Center. Students should check the current *Graduate Schedule of Classes* to determine when courses will be offered at specific locations.

Students with more than five years of managerial experience may also earn the MS in information technology through an accelerated executive program (described on p. 93).

**Curriculum Requirements**

**Noncredit Course**

All degree-seeking students are required to complete the noncredit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

**Core Courses**

Students must complete the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSIT 610</td>
<td>Foundations of Information Technology</td>
<td>3</td>
</tr>
<tr>
<td>MSIT 620</td>
<td>Computer Concepts</td>
<td>3</td>
</tr>
<tr>
<td>MSIT 630</td>
<td>Concepts in Software-Intensive Systems</td>
<td>3</td>
</tr>
<tr>
<td>MSIT 640</td>
<td>Data Communications and Networks</td>
<td>3</td>
</tr>
<tr>
<td>MSIT 650</td>
<td>Systems Engineering</td>
<td>3</td>
</tr>
<tr>
<td>MSIT 660</td>
<td>Internet Technologies</td>
<td>3</td>
</tr>
</tbody>
</table>

**Elective Courses**

Students may select five courses from any of the following subject groups to fulfill the elective requirement. Course selections need not belong to the same group.

**Computer Systems Group**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSMN 614</td>
<td>Data Structures and Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>CSMN 616</td>
<td>Distributed Computing</td>
<td>3</td>
</tr>
<tr>
<td>CSMN 617</td>
<td>Principles of Programming Languages</td>
<td>3</td>
</tr>
<tr>
<td>CSMN 618</td>
<td>Knowledge-Based Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

**Database Group**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSMN 661</td>
<td>Relational Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>CSMN 662</td>
<td>Advanced Relational/Object Relational Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>CSMN 663</td>
<td>Distributed Database Management Systems</td>
<td>3</td>
</tr>
<tr>
<td>CSMN 664</td>
<td>Object-Oriented Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>CSMN 665</td>
<td>Data Warehouse Technologies</td>
<td>3</td>
</tr>
<tr>
<td>CSMN 666</td>
<td>Database Systems Administration</td>
<td>3</td>
</tr>
<tr>
<td>CSMN 667</td>
<td>Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>DSMN 668</td>
<td>Database Security</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electronic Commerce Group**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECOM 610</td>
<td>Introduction to E-Commerce</td>
<td>3</td>
</tr>
<tr>
<td>ECOM 620</td>
<td>E-Marketing</td>
<td>3</td>
</tr>
<tr>
<td>ECOM 670</td>
<td>Social, Legal, Ethical, and Regulatory Issues</td>
<td>3</td>
</tr>
</tbody>
</table>

*Course descriptions are found on pp. 110–56.*
### Information Assurance Group
- CSMN 655 Information Risk Assessment and Security Management (3)
- CSMN 681 Cryptology and Data Protection (3)
- CSMN 683 Intrusion Detection, Incident Response, and Computer Forensics (3)
- CSMN 685 Security Policy, Ethics, and the Legal Environment (3)
- TLMN 672 Network and Internet Security (3)

### Software Systems Group
- MSWE 645 Systems and Software Standards and Requirements (3)
- MSWE 646 Software Design and Implementation (3)
- MSWE 647 Software Verification and Validation (3)
- MSWE 648 Software Maintenance (3)

### Telecommunications Group
- TLMN 620 Local Area Networking Systems (3)
- TLMN 625 Wide Area Networking Systems (3)
- TLMN 641 Network Management and Design (3)
- TLMN 645 Wireless Telecommunications Systems (3)

### Information Technology Management Group
- TMAN 610 Economics and Financial Analysis (3)
- TMAN 614 Strategic Management of Technology and Innovation (3)
- TMAN 633 Managing People in Technology-Based Organizations (3)
- TMAN 640 Project Management (3)

### Special Topics Group
- ITSM 637 IT Acquisitions Management (3)
- CSMN 639 Multimedia and the Internet (3)
- MSIT 699 Current Trends in Information Technology (3)

### Project Management Group
- PMAN 634 Program and Project Management (3)
- PMAN 635 Techniques of Scheduling and Resource Allocation (3)
- PMAN 636 Legal Aspects of Contracting (3)
- PMAN 637 Risk Management: Tools and Techniques (3)
- PMAN 638 Communication, Negotiation, and Conflict Resolution (3)

### Capstone Course
Students must take the following course:
- ITSM 670 Information Technology Integration and Applications (3)

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*Course descriptions are found on pp. 110–56.*
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.

Overview

In each segment of this 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 requires 36–39 credits and consists of six core courses and five track courses. Depending on their specialization, students then complete either a capstone course or an end-of-program option.

The program has 12 areas of specialization:

- 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
- Project management
- Public relations

Program Requirements

Additional requirements for the accounting track are the same as those listed for the Master of Science in accounting and financial management (found on p. 48).

Decision-Pending Status

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 601, ADMN 625, or ADMN 635. Students must receive an admission decision before subsequent enrollments.
Formats/Locations

Classes in the MS in management program are offered online and at College Park and the Shady Grove Center. 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.

Students who first complete the entire MS in management degree program and meet all requirements for graduation will be eligible to earn an MBA, in either the regular or executive format, with only an additional 18–24 semester hours of coursework. The MBA is offered online. More information on the dual degree program is on p. 89. Executive dual degree programs are described on pp. 95–96.

Agreements with Military Institutions

More information on UMUC’s partnerships with various military institutions are on p. 9.

Curriculum Requirements

Noncredit Courses

All degree-seeking students are required to complete the noncredit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study. Students without recent coursework in accounting or economics are strongly advised to complete UCSP 620 Financial Accounting and UCSP 621 Economics. Students with little experience in statistics, accounting, or finance are advised to complete UCSP 630 Introduction to Research Methods.

Core Courses

Students must complete the following courses:

- ADMN 601 The Manager in a Technological Society (3)
- ADMN 625 Organizational Communication and Group Development (3)
- ADMN 635 Organizational Leadership and Decision Making (3)
- ADMN 638 Research Methods for Managers (3)*
- ADMN 651 Strategic Management Capstone (3)

Students in the financial management track must complete the following course:

- ADMN 631 Financial Management in Organizations (3)

Students in all other tracks must complete the following course:

- ADMN 630 Financial Decision Making for Managers (3)

Students in the project management track must also complete the following course:

- ADMN 628 Contract Pricing and Negotiation (3)

* Students in the public relations track must take PRPA 603 instead of ADMN 638.
Track Courses
In addition to the core courses, students in the MS in management program must select courses from one of the following specialty tracks to concentrate their study of management.

Accounting
Students in the accounting track must complete the following courses:

ACCT 608 Fraud Detection and Accounting Ethics (3)
ACCT 610 Financial Accounting (3)
ACCT 614 Accounting Information Systems (3)

Students in the accounting track must complete two of the following courses:

ACCT 609 E-Commerce Accounting (3)
ACCT 611 Management Accounting (3)
ACCT 612 Auditing Process (3)
ACCT 613 Federal Income Taxation (3)

Students in the accounting track must complete the following course as the capstone requirement:

ACCT 615 Capstone Accounting Course (3)

Energy Resources Management and Policy
Students in the energy resources management and policy track must complete the following courses:

ENER 601 Energy Resources (3)
ENER 602 Energy Economics (3)
ENER 603 Energy Infrastructure Management (3)
ENER 604 New Technologies in Energy Management (3)
ENVM 646 Environmental/Energy Law and Policy Development (3)

Students in the energy resources management and policy track may choose one of two end-of-program options:

- ADMN 690 Management Project (3)
- Two elective courses, approved by the program director

Financial Management
Students in the financial management track must complete the following courses:

ADMN 632 Financial Management of Current Operations (3)
ADMN 633 Capital Markets, Institutions, and Long-Term Financing (3)
ADMN 634 Investment Valuation (3)
ADMN 655 Strategic Financial Management (3)

Students in the financial management track may choose one of two end-of-program options:

- ADMN 690 Management Project (3)
- ADMN 636 Cost Management (3) and one interdisciplinary breadth course from the list on p. 71

Health Care Administration
Students in the health care administration track must complete the following courses:

HCAD 620 The U.S. Health Care System (3)
HCAD 650 Legal Aspects of Health Care Administration (3)
HCAD 660 Health Care Institutional Organization and Management (3)

Students in the health care administration track must choose two of the following courses:

HCAD 610 Information Technology for Health Care Administration (3)
HCAD 630 Public Health Administration (3)
HCAD 640 Financial Management for Health Care Organizations (3)
HCAD 670 Long-Term Care Administration (3)
HCAD 680 Special Topics in Health Care Administration (3)

Course descriptions are found on pp. 110–56.

| 68 | 2003–2004 Graduate Catalog |
Students in the health care administration track may choose one of two end-of-program options:

- ADMN 690 Management Project (3)
- One elective course chosen from those courses in the health care administration track not already taken to fulfill track requirements and one interdisciplinary breadth course from the list on p. 71

**Human Resource Management**

Students in the human resource management track must complete the following course:

ADMN 662 Issues and Practices in Human Resource Management (3)

Students in the human resource management track must choose four of the following courses:

ADMN 661 Employee Relations (3)
ADMN 663 Job Analysis, Assessment, and Compensation (3)
ADMN 664 Organizational Development and Change (3)
ADMN 665 Current Perspectives in Training and Development (3)
ADMN 666 Recruitment and Selection (3)
ADMN 667 Managing Global Teams (3)
ADMN 668 Human Resource Technologies (3)

Students in the human resource management track may choose one of two end-of-program options:

- ADMN 690 Management Project (3)
- One elective/depth course chosen from those courses in the human resource management track not already taken to fulfill track requirements and one interdisciplinary breadth course from the list on p. 71

**Interdisciplinary Studies in Management**

Students must complete one course from each of the following clusters:

**International Technology Cluster**

IMAN 601 Strategic Management in a Global Environment (3)
IMAN 661 Area Studies: Business Strategies for Europe (3)*

IMAN 640 Information Systems Management and Integration (3)
ADMN 643 Systems Analysis and Design (3)
ADMN 644 Decision Support Systems and Expert Systems (3)
ADMN 645 Information Technology, the CIO, and Organizational Transformation (3)

**Marketing Cluster**

ADMN 658 Marketing, Development, and Public Relations (3)
ADMN 685 Strategic Market Planning (3)
ADMN 686 Marketing Management (3)
    
    or
    
    IMAN 640 International Marketing Management (3)
ADMN 687 Market Segmentation and Penetration (3)

* Includes a trip to Europe.
ADMN 688  Marketing Intelligence and Research Systems (3)

or

IMAN 620  International Marketing Research and Analysis (3)
ADMN 689  Integrated Direct Marketing (3)
ECOM 620  E-Marketing (3)
PRPA 601  Public Relations Theory and Practice (3)

Students in the interdisciplinary studies in management track may choose one of two end-of-program options:

■ ADMN 690  Management Project (3)

■ Two elective courses chosen from any MS in management track, with the approval of the department advisor.

**Management Information Systems**

Students in the management information systems track must complete the following courses:

ADMN 641  Information Systems Management and Integration (3)
ADMN 643  Systems Analysis and Design (3)
ADMN 644  Decision Support Systems and Expert Systems (3)
ADMN 645  Information Technology, the CIO, and Organizational Transformation (3)

Students in the management information systems track may choose one of the following:

ADMN 640  Information Systems for Managers (3)
Any CSMN course
Any TLMN course

Students in the management information systems track may choose one of two end-of-program options:

■ ADMN 690  Management Project (3)

■ One CSMN or TLMN course and one interdisciplinary breadth course from the list on p. 71

**Marketing**

Students in the marketing track must complete the following courses:

ADMN 685  Strategic Market Planning (3)
ADMN 686  Marketing Management (3)

Students in the marketing track must complete three of the following courses:

ADMN 687  Marketing Segmentation and Penetration (3)
ADMN 688  Marketing Intelligence and Research Systems (3)
ADMN 689  Integrated Direct Marketing (3)
ECOM 620  E-Marketing (3)

Students in the marketing track may choose one of two end-of-program options:

■ ADMN 690  Management Project (3)

■ One elective course chosen from those courses in the marketing track not already taken to fulfill track requirements and one interdisciplinary breadth course from the list on p. 71

**Not-for-Profit Management**

Students in the not-for-profit management track must complete the following courses:

ADMN 654  Not-for-Profit Financial Management (3)
ADMN 656  Not-for-Profit Organizations and Issues (3)
ADMN 657  Not-for-Profit Law and Governance (3)
ADMN 658  Marketing, Development, and Public Relations (3)
ADMN 659  Strategic Management in Not-for-Profit Organizations (3)

Students in the not-for-profit management track may choose one of two end-of-program options:

■ ADMN 690  Management Project (3)

■ One elective course from any track (with the approval of the program director) and one interdisciplinary breadth course from the list on p. 71

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*Course descriptions are found on pp. 110–56.*
**Project Management**

Students in the project management track must complete the following courses:

- PMAN 634 Program and Project Management (3)
- PMAN 635 Techniques of Scheduling and Resource Allocation (3)
- PMAN 636 Legal Aspects of Contracting (3)
- PMAN 637 Risk Management: Tools and Techniques (3)
- PMAN 638 Communication, Negotiation, and Conflict Resolution (3)

Students in the project management track complete 36 credits in required coursework and have no special end-of-program requirement.

**Procurement and Contract Management**

Students in the procurement and contract management track must complete the following courses:

- ADMN 626 Purchasing and Materials Management (3)
- ADMN 627 Legal Aspects of Contracting (3)
- ADMN 628 Contract Pricing and Negotiation (3)
- ADMN 629 Strategic Purchasing and Logistics (3)
- ADMN 660 Commercial Transactions: Law, Management, and Technology Transfer (3)

Students in the procurement and contract management track may choose one of two end-of-program options:

- ADMN 690 Management Project (3)
- Either ADMN 622 or ADMN 623 and one interdisciplinary breadth course listed at right

**Public Relations**

Students in the public relations track must complete the following as a core course (in place of ADMN 638):

- PRPA 603 Public Relations Research

Students in the public relations track must complete the following track courses:

- PRPA 601 Public Relations Theory and Practice (3)
- PRPA 602 Media Communications Techniques (3)
- PRPA 604 Public Relations Law and Ethics (3)
- PRPA 610 Crisis Management Seminar (3)

Students in the public relations track must complete one of the following tools courses:

- CSMN 639 Multimedia and the Internet (3)
- ECOM 620 E-Marketing (3)

Students in the public relations track must complete the following course as their end-of-program requirement:

- PRPA 690 Practicum/Internship (3)

**End-of-Program Option**

Students pursuing the MS in management (except those in the accounting, project management, and public relations tracks) choose one of two end-of-program options (described under each track).

The following courses satisfy the requirement for an interdisciplinary breadth course within the two-course option:

- ECOM 670 Social, Legal, and Ethical Issues in Electronic Commerce (3)
- IMAN 601 Strategic Management in a Global Environment (3)
- IMAN 625 International Trade and Trade Policy (3)
- IMAN 630 International Financial Management (3)
- IMAN 635 Managing Country Risk (3)
- IMAN 640 International Marketing Management (3)
- IMAN 645 The International Legal and Tax Environment (3)
- IMAN 661 Area Studies: Business Strategies for Europe (3)*
- TMAN 632 Organizational Performance Management (3)
- TMAN 640 Project Management (3)

* Includes a trip to Europe.

Course descriptions are found on pp. 110–56.

www.umuc.edu/grad
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 (MS) in technology management provides a broad-based core of management competency in the central business functions, along with 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.

Overview

The MS in technology management 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 MS in technology management 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.

The program has three areas of specialization in addition to the general program:
- Energy resources management and policy
- Project management
- Technology systems management

The degree requires 36–39 credits. Distribution of coursework between core, track, and elective courses varies according to track. Only the technology systems management track requires an end-of-program option.

Program Requirements

Decision-Pending Status

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 613, or TMAN 633. Students must receive an admission decision before subsequent enrollments.
Formats/Locations

Classes in the MS in technology management program are currently offered online and at College Park and the Shady Grove and Annapolis Centers. Students should check the current Graduate Schedule of Classes to determine when courses will be offered at specific locations.

Students with more than five years of managerial experience may also earn the MS in technology management through an accelerated executive program (described on p. 94.)

Students who first complete the entire MS in technology management degree program and meet all requirements for graduation will be eligible to earn an MBA, in either the regular or executive format, with only an additional 18–24 semester hours of coursework. Students who complete the MS in technology management as part of the dual degree program must fulfill slightly different degree requirements (listed on p. 90). The MBA is offered online. Executive dual degree programs are described on pp. 95–96.

Curriculum Requirements

Technology Management General Program

Noncredit Course

All degree-seeking students are required to complete the noncredit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Core Courses

Students in the general program must complete the following courses:

- TMAN 611 Principles of Technology Management (3)
- TMAN 612 Financial Management for Technology Managers (3)
- TMAN 613 Marketing Technology-Based Products and Services (3)
- TMAN 614 Strategic Management of Technology and Innovation (3)
- TMAN 632 Organizational Performance Management (3)
- TMAN 633 Managing People in Technology-Based Organizations (3)
- TMAN 640 Project Management (3)
- TMAN 671 Seminar in Technology and Innovation Management (3)

Elective Courses

Students must choose five of the following courses:

- ADMN 622 Integrative Supply Chain Management (3)
- ADMN 628 Contract Pricing and Negotiation (3)
- ADMN 644 Decision Support and Expert Systems (3)
- ADMN 660 Commercial Transactions: Law, Management, and Technology Transfer (3)
- BIOT 610 Introduction to Bioinformatics (3)
- BIOT 640 Societal Issues in Biotechnology (3)
- BIOT 643 The Techniques of Biotechnology (3)
- CSMN 615 Hardware and Operating Systems (3)
- CSMN 636 Telecommunications and Connectivity (3)
- CSMN 661 Relational Database Systems (3)
- ECOM 610 Introduction to E-Commerce (3)
- ECOM 620 E-Marketing (3)
- ECOM 630 Information Risk Assessment and Security Management (3)
- ECOM 640 Internet Principles and Applications (3)
- ECOM 650 E-Commerce Applications and Operations (3)
- ENVM 644 New Technologies in Environmental Management (3)
- ENVM 649 Principles of Waste Management and Pollution Control (3)
- ENVM 650 Land and Water Resource Management (3)
- TLMN 645 Wireless Telecommunications Systems (3)
- TMAN 610 Economics and Financial Analysis (3)
- TMAN 621 Systems Analysis and Operations Research (3)
- TMAN 622 Systems Development, Acquisition, and Management (3)
- TMAN 623 Systems Analysis and Design (3)
- TMAN 636 Knowledge Management (3)
- TMAN 661 Systems Development and Management (3)
Energy Resources Management and Policy Track

Noncredit Course
All degree-seeking students are required to complete the non-credit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Core Courses
Students in the energy resources management and policy track must complete the following core courses:

- TMAN 611 Principles of Technology Management (3)
- TMAN 612 Financial Management for Technology Managers (3)
- TMAN 613 Marketing Technology-Based Products and Services (3)
- TMAN 632 Organizational Performance Management (3)
- TMAN 633 Managing People in Technology-Based Organizations (3)
- TMAN 640 Project Management (3)
- TMAN 671 Seminar in Technology and Innovation Management (3)

Track Courses
Students in the energy resources management and policy track must complete the following track courses:

- ENER 601 Energy Resources (3)
- ENER 602 Energy Economics (3)
- ENER 603 Energy Infrastructure Management (3)
- ENER 604 New Technologies in Energy Management (3)
- ENER 646 Environmental/Energy Law and Policy Development (3)

Elective Course
Students in the energy resources management and policy track must also choose one TMAN course as an elective.

Project Management Track Requirements

Noncredit Course
All degree-seeking students are required to complete the non-credit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Core Courses
Students in the project management track must complete the following core courses:

- TMAN 610 Economics and Financial Analysis (3)
- TMAN 611 Principles of Technology Management (3)
- TMAN 613 Marketing Technology-Based Products and Services (3)
- TMAN 614 Strategic Management of Technology and Innovation (3)
- TMAN 632 Organizational Performance Management (3)
- TMAN 633 Managing People in Technology-Based Organizations (3)
- TMAN 671 Seminar in Technology and Innovation Management (3)

Track Courses
Students in the project management track must complete the following courses:

- PMAN 634 Program and Project Management (3)
- PMAN 635 Techniques of Scheduling and Resource Allocation (3)
- PMAN 636 Legal Aspects of Contracting (3)
- PMAN 637 Risk Management: Tools and Techniques (3)
- PMAN 638 Communication, Negotiation, and Conflict Resolution (3)

Course descriptions are found on pp. 110–56.
Technology Systems Management Track

Noncredit Course
All degree-seeking students are required to complete the non-credit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Core Courses
Students in the technology systems management track must complete the following core courses:

- TMAN 611 Principles of Technology Management (3)
- TMAN 612 Financial Management for Technology Managers (3)
- TMAN 613 Marketing Technology-Based Products and Services (3)
- TMAN 614 Strategic Management of Technology and Innovation (3)
- TMAN 671 Seminar in Technology and Innovation Management (3)

Track Courses
Students in the technology systems management track must complete the following track courses:

- TMAN 621 Systems Analysis and Operations Research (3)
- TMAN 622 Systems Development, Acquisition, and Management (3)
- TMAN 623 Systems Analysis and Design (3)
- TMAN 640 Project Management (3)

Elective Courses
Students must choose two of the following elective courses:

- CSMN 615 Hardware and Operating Systems (3)
- CSMN 636 Telecommunications and Connectivity (3)
- CSMN 639 Multimedia and the Internet (3)
- CSMN 655 Information Risk Assessment and Security Management (3)
- TLMN 610 Data Communications Systems (3)
- TLMN 620 Local Area Networking Systems (3)
- TLMN 645 Wireless Telecommunications Systems (3)
- TMAN 661 Systems Development and Management

End-of-Program Option
Students in all tracks must choose one of two end-of-program options:

- TMAN 690 Technology Management Project (3)
- Either TMAN 632 or TMAN 633 and one course chosen from ADMN 627, ADMN 628, ADMN 661, ADMN 663, or IMAN 615

Course descriptions are found on pp. 110–56.
Master of Science in Telecommunications Management

The Master of Science (MS) 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.

Overview
This degree program requires 36–39 credits and consists of five core courses, three technical specialization courses, three required systems courses, and one end-of-program option.

Agreement with National Defense University
More information on UMUC’s partnership with National Defense University is on p. 9.

Program Requirements

Decision-Pending Status
Students may 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 610, or TMAN 632. Students must receive an admission decision prior to subsequent enrollments.

Technology Requirements
Students pursuing a degree in any of the information technology fields (computer systems management, information technology, telecommunications management, and software engineering) must have access to a computer and modem capable of supporting current software. Such programs may require more than the minimum hardware and software needed for basic online communication and study (listed on p. 31).

In addition, students are also required to have access to a computer with the following features:
- At least 256 MB RAM (512 MB preferred)
- At least 5 GB disk space
- Windows 2000 or higher
- 56 KB modem or better (e.g., broadband)
- CD burner
- Telnet and FTP service (via their ISP)
Compression software (e.g., WinZip)
■ FTP software
■ Media software (e.g., RealOne Player)

Formats/Locations
Courses in the MS in telecommunications management program are currently offered online and at College Park and the Shady Grove Center. Students should check the current Graduate Schedule of Classes to determine when courses will be offered at specific locations.

Curriculum Requirements

Noncredit Course
All degree-seeking students are required to complete the non-credit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Core Courses
Students must complete the following courses:

- TLMN 602 Telecommunications Industry: Structure and Environment (3)
- TMAN 610 Economics and Financial Management (3)
- TMAN 614 Strategic Management of Technology and Innovation (3)
- TMAN 632 Organizational Performance Management (3)
- ITSM 670 Information Technology Integration and Applications (3)

Systems Courses
Students must complete the following courses:

- TLMN 641 Network Management and Design (3)
- ITSM 637 IT Acquisitions Management (3)
- TLMN 655 Systems Integration for Telecommunications Managers (3)

Technical Specialization Courses
Students must complete three of the following courses:

- TLMN 610 Data Communications Systems (3)
- TLMN 620 Local Area Networking Systems (3)
- TLMN 625 Wide Area Networking Systems (3)
- TLMN 630 Satellite Communications Systems (3)
- TLMN 636 Internet Technologies (3)
- TLMN 645 Wireless Telecommunications Systems (3)
- TLMN 672 Network and Internet Security (3)

End-of-Program Option
Students may choose one of two end-of-program options:

- TLMN 690 Telecommunications Management Project (3)
- One interdisciplinary course—chosen from ADMN 625, ADMN 635, ADMN 638, ECOM 610, ECOM 620, ECOM 670, IMAN 601, IMAN 625, IMAN 635, IMAN 661,* or TMAN 633, and one approved depth course—chosen from CSMN 601, CSMN 615, or CSMN 655, or any TLMN course not yet taken

* Includes a trip to Europe.
Master of Software Engineering

The Master of Software Engineering (MSwE) 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.

Overview

The MSwE requires the completion of 12 courses for a total of 36 credits, which must be completed within seven years. This degree program consists of eight core courses, three electives, and one practical software engineering project.

Program Requirements

In addition to the general admission requirements (listed on p. 11), candidates for this program are required to have at least a year of experience in software design or an undergraduate degree in engineering or computer science; have completed a course in discrete math (for example, CMSC 150 Introduction to Discrete Structures or CMIS 160 Discrete Mathematics for Computing); show competence in using an imperative structured programming language (work experience may be used); and present two letters of recommendation. Students are strongly encouraged to submit a résumé.

Note: If the transcript from the institution where the student received his or her degree does not reflect the discrete math course, the transcript that does show such coursework must also be submitted.

Provisional Status

Students may be admitted to provisional status if prerequisite coursework is insufficient 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.

Decision-Pending Status

Students may register for one of the following graduate courses before UMUC has received the official transcript from the bachelor’s-degree-granting institution: MSWE 601, MSWE 640, or an elective. Students must receive an admission decision prior to subsequent enrollments.

Technology Requirements

Students pursuing a degree in any of the information technology fields (computer systems management, information technology, telecommunications management, and software engineering) must have access to a computer and modem capable of supporting current software. Such programs may require more than the minimum hardware and software needed for basic online communication and study (listed on p. 31).
In addition, students are also required to have access to a computer with the following features:

- At least 256 MB RAM (512 MB preferred)
- At least 5 GB disk space
- Windows 2000 or later
- 56 KB modem or better (e.g., broadband)
- CD burner
- Telnet and FTP service (via their ISP)
- Compression software (e.g., WinZip)
- FTP software
- Media software (e.g., RealOne Player)

**Formats/Locations**

Classes in the MSwE program are currently offered online and at College Park and the Shady Grove Center. Students should check the current Graduate Schedule of Classes to determine when courses will be offered at specific locations.

**Curriculum Requirements**

**Noncredit Course**

All degree-seeking students are required to complete the non-credit course UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

**Core Courses**

Students must complete the following courses:

- MSWE 601 Issues in Software Engineering (3)
- MSWE 603 Systems Engineering (3)
- MSWE 635 Software Systems Development (3)
- MSWE 640 Software Project Management (3)
- MSWE 645 System and Software Standards and Requirements (3)
- MSWE 646 Software Design and Implementation (3)
- MSWE 647 Software Verification and Validation (3)
- MSWE 648 Software Maintenance (3)

**Elective Courses**

Students are required to take three electives from the following range of technical and managerial offerings. All prerequisites apply.

**Technical Elective Courses**

- CSMN 614 Data Structures and Algorithms (3)
- CSMN 615 Hardware and Operating Systems (3)
- CSMN 616 Distributed Computing (3)
- CSMN 617 Principles of Programming Languages (3)
- CSMN 618 Knowledge-Based Systems (3)
- CSMN 655 Information Risk Assessment and Security Management (3)
- CSMN 661 Relational Database Systems (3)
- CSMN 662 Advanced Relational/Object-Relational Database Systems (3)
- CSMN 663 Distributed Database Management Systems (3)
- CSMN 664 Object-Oriented Database Systems (3)
- CSMN 665 Data Warehouse Technologies (3)
- CSMN 667 Data Mining (3)
- CSMN 681 Cryptology and Data Protection (3)
- MSWE 697 Independent Research (3)
- MSWE 698 Advanced Topics in Systems and Software Engineering (3)
- MSWE 699 Advanced Topics in Software Engineering (3)
- TLMN 610 Data Communications Systems (3)
- TLMN 620 Local Area Networking Systems (3)
- TLMN 625 Wide Area Networking Systems (3)
- TLMN 636 Internet Technologies (3)
- TLMN 641 Network Management and Design (3)
- TLMN 645 Wireless Telecommunications Systems (3)
- TLMN 672 Network and Internet Security (3)

**Managerial Elective Courses**

- ECOM 610 Introduction to E-Commerce (3)
- ITSM 637 IT Acquisitions Management (3)
- TMAN 614 Strategic Management of Technology and Innovation (3)
- TMAN 633 Managing People in in Technology-Based Organizations (3)

**Capstone Course**

Students must complete the following capstone course:

- MSWE 617 Software Engineering Project

*Course descriptions are found on pp. 110–56.*
Dual 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 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.

Program Requirements

Students who are interested in pursuing dual degrees must meet the admission requirements of each program. Information on the MIM may be found on p. 45; the MBA is described on p. 39.

Formats/Locations

Classes in the MIM program are currently offered online and at Adelphi; classes for students pursuing the MBA as part of a dual degree program are offered online. Students should check the current Graduate Schedule of Classes to determine when courses will be offered at specific locations.

Students with at least five years of managerial experience may be eligible to complete all or part of the MBA portion of the dual degree program in an accelerated executive format; more information is on pp. 95–96.

Curriculum Requirements

Students who first complete the MIM and meet all the requirements for graduation for that program may then earn the MBA by completing 18 credits of MBA work. The choice of MBA seminars depends on the student’s MIM specialty track.

Students who complete the international commerce and international marketing tracks of the MIM must take the following MBA courses:

AMBA 601D The Role of Managers and Organizations in Society (6)
AMBA 604D Technology and Operations Management (6)
AMBA 605D The Economics of Management Decisions (6)

Students who complete the international finance track of the MIM must take the following MBA courses:

AMBA 601D The Role of Managers and Organizations in Society (6)
AMBA 603D The Marketing of New Ideas (6)
AMBA 604D Technology and Operations Management (6)

Students who first complete the MBA and meet all the requirements for graduation for that program may then earn the MIM by completing 12 credits from the MIM curriculum.
Master of Science in Accounting and Financial Management/Master of International Management

The purpose of the dual Master of Science (MS) in accounting and financial management/Master of International Management (MIM) is to enable students to extend the breadth and depth of their graduate studies beyond the specialties of accounting and financial management. Based on the shared curricula of the programs, the dual degree may be earned for substantially fewer credits than if each program were completed separately. Students can choose to complete the MS in accounting and financial management and take an additional 24–27 credits to earn the MIM (financial management track).

Program Requirements

Students who are interested in pursuing dual degrees must meet the admission requirements of each program. Information on the MS in accounting and financial management may be found on p. 48; the MIM is described on p. 45.

Formats/Locations

Courses in accounting are offered online only; financial management courses are offered in both online and classroom formats. Classes in the MIM program are offered online and at College Park. Students should check the current Graduate Schedule of Classes to determine when courses will be offered at specific locations.

Curriculum Requirements

Students in the dual MS in accounting and financial management/MIM program must complete the MS in accounting and financial management first. Requirements for that degree are listed on p. 48.

For the MIM, students must take the following courses:

IMAN 601 Strategic Management in a Global Environment (3)
IMAN 605 Intercultural Communication and Leadership (3)
IMAN 610 Economics in a Global Context (3)
IMAN 615 Foreign Investment and Strategic Alliances (3)
IMAN 625 International Trade and Trade Policy (3)
IMAN 645 The International Legal and Tax Environment (3)
IMAN 650 Managing Overseas Operations (3)

Students must also complete an end-of-program option (described on p. 47).
Master of Science in Accounting and Financial Management/Master of Science in Management

The purpose of the dual Master of Science (MS) in accounting and financial management/Master of Science (MS) in management is to enable students to extend the breadth and depth of their graduate studies beyond the specialties of accounting and financial management. Based on the shared curricula of the programs, the dual degrees may be earned for substantially fewer credits than if each program were completed separately. Students can choose to complete the MS in accounting and financial management and take an additional 18–21 credits to earn the MS in management with a specialization in either accounting or financial management.

Program Requirements

Students who are interested in pursuing dual degrees must meet the admission requirements of each program. Information on the MS in accounting and financial management may be found on p. 48; the MS in management is described on p. 66.

Formats/Locations

Courses in accounting are offered online only; financial management courses are offered in both online and classroom formats. Classes in the MS in management program are offered online and at College Park and the Shady Grove Center. Students should check the current Graduate Schedule of Classes to determine when courses will be offered at specific locations.

Curriculum Requirements

Students in the dual MS in accounting and financial management/MS in management program must complete the MS in accounting and financial management first. Requirements for that degree are listed on p. 48.

For the MS in management with a specialization in financial management, students must take the following courses:

- ADMN 601 The Manager in a Technological Society (3)
- ADMN 625 Organizational Communication and Group Development (3)
- ADMN 635 Organizational Leadership and Decision Making (3)
- ADMN 638 Research Methods for Managers (3)
- ADMN 651 Strategic Management Capstone (3)
- ADMN 655 Strategic Financial Management (3)

Students who have not completed ACCT 611 as part of the MS in accounting and financial management must take the following course:

- ADMN 636 Cost Management (3)
For the MS in management with a specialization in accounting, students must take the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMN 601</td>
<td>The Manager in a Technological Society</td>
<td>3</td>
</tr>
<tr>
<td>ADMN 625</td>
<td>Organizational Communication and Group Development</td>
<td>3</td>
</tr>
<tr>
<td>ADMN 635</td>
<td>Organizational Leadership and Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>ADMN 638</td>
<td>Research Methods for Managers</td>
<td>3</td>
</tr>
<tr>
<td>ADMN 651</td>
<td>Strategic Management Capstone</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 615</td>
<td>Accounting Capstone</td>
<td>3</td>
</tr>
</tbody>
</table>

Students must also take an accounting track course not used to fulfill the MS in accounting and financial management degree requirements.

*Course descriptions are found on pp. 110–56.*
Master of Science in Accounting and Information Technology/Master of Science in Accounting and Financial Management

The purpose of the dual Master of Science (MS) in accounting and information technology/Master of Science (MS) in accounting and financial management is to enable students to extend the breadth and depth of their graduate studies beyond the specialties of accounting and information technology. Based on the shared curricula of both programs, the dual degrees may be earned in 54 credits, which is substantially fewer credits than if each program were completed separately.

Program Requirements

Students who are interested in pursuing dual degrees must meet the admission requirements of each program. Information on the MS in accounting and information technology may be found on p. 50; the MS in accounting and financial management is described on p. 48.

Formats/Locations

Courses in accounting are offered online only; financial management, management information systems, and computer systems management courses are offered in both online and classroom formats. Students should check the current Graduate Schedule of Classes to determine when courses will be offered at specific locations.

Curriculum Requirements

Students in the dual MS in accounting and information technology/MS in accounting and financial management program must complete the MS in accounting and information technology first. Requirements for that degree are listed on p. 50.

For the MS in accounting and financial management, students must take the following courses:

- ADMN 631  Financial Management in Organizations (3)
- ADMN 632  Financial Management of Current Operations (3)
- ADMN 633  Capital Markets, Institutions, and Long-Term Financing (3)
- ADMN 634  Investment Valuation (3)
- ADMN 639  Multinational Financial Management (3)
- ADMN 619  Accounting and Finance Capstone (3)
Master of Science in Accounting and Information Technology/Master of Science in Management

The purpose of the dual Master of Science (MS) in accounting and information technology/Master of Science (MS) in management (accounting track) is to enable students to extend the breadth and depth of their graduate studies beyond the specialties of accounting and information technology. Based on the shared curricula of both programs, the dual degrees may be earned in 54 credits, which is substantially fewer credits than if each program were completed separately.

Program Requirements

Students who are interested in pursuing dual degrees must meet the admission requirements of each program. Information on the MS in accounting and information technology may be found on p. 50; the MS in management is described on p. 66.

Formats/Locations

Courses in accounting are offered online only; management information systems and computer systems management courses are offered in both online and classroom formats. Classes in the MS in management program are offered online and at College Park and the Shady Grove Center. Students should check the current Graduate Schedule of Classes to determine when courses will be offered at specific locations.

Curriculum Requirements

Students in the dual MS in accounting and information technology/MS in management (accounting track) program must complete the MS in accounting and information technology first. Requirements for that degree are listed on p. 50.

For the MS in management (accounting track), students must take five of the following courses:

- ADMN 601 The Manager in a Technological Society (3)
- ADMN 625 Organizational Communication and Group Development (3)
- ADMN 631 Financial Management in Organizations (3)
- ADMN 635 Organizational Leadership and Decision Making (3)
- ADMN 638 Research Methods for Managers (3)
- ADMN 651 Strategic Management Capstone (3)

Students must also complete the following capstone course:

- ACCT 615 Accounting Capstone (3)
Master of Science in E-Commerce/Master of Business Administration

The purpose of the dual Master of Science (MS) in e-commerce 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 MS in e-commerce and MBA degrees for substantially fewer credits than if each program were completed separately.

Program Requirements

Students who are interested in pursuing dual degrees must meet the admission requirements of each program. Information on the MS in e-commerce may be found on p. 57; the MBA is described on p. 39.

Formats/Locations

Courses in e-commerce and those for students pursuing the MBA as part of a dual degree program are currently offered online only. Students should check the current Graduate Schedule of Classes to determine when courses will be offered.

Students with at least five years of managerial experience may be eligible to complete all or part of the MBA portion of the dual degree program in an accelerated executive format; more information is on pp. 95–96.

Curriculum Requirements

Students in the dual MS in e-commerce/MBA program can choose to complete the MS in e-commerce first and then take additional credits to earn the MBA or complete the MBA first and then take additional credits to earn the MS in e-commerce.

Students who first complete the MS in e-commerce, and meet all the requirements for graduation for that program, may then earn the MBA by completing 24 credits of MBA work, for a total of 60 credits for both degrees.

Students must take the following MBA courses:

- AMBA 602D The Dynamics of Individuals and Groups at Work (6)
- AMBA 604D Technology and Operations Management (6)
- AMBA 605D The Economics of Management Decisions (6)
- AMBA 606D Organizations and the External Environment (6)
Conversely, a student in the MBA program may pursue the dual degree option by taking 18 credits from the MS in e-commerce core curriculum for a total of 61 credits for both degrees.

Students must complete six of the following e-commerce courses:

ECOM 610 Introduction to E-Commerce (3)
ECOM 620 E-Marketing (3)

ECOM 630 Information Risk Assessment and Security Management (3)
ECOM 640 Internet Principles and Applications (3)
ECOM 650 E-Commerce Applications and Operations (3)
ECOM 660 E-Commerce Financial Management and Accounting (3)
ECOM 670 Social, Legal, Ethical, and Regulatory Issues (3)
ECOM 680 E-Commerce Application Software (3)
Master of Science in Health Care Administration/Master of Business Administration

The purpose of the dual Master of Science (MS) in health care administration/Master of Business Administration (MBA) is to combine the specialized and focused knowledge of health care administration in the MS with the business expertise of the MBA. Dual degree students may 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 and then expand their knowledge of more general management issues through three MBA seminars.

Program Requirements

Students who are interested in pursuing dual degrees must meet the admission requirements of each program. Information on the MS in health care administration may be found on p. 61; the MBA is described on p. 39.

Formats/Locations

Classes in the MS in health care administration are offered online and at College Park and the Shady Grove Center. MBA classes for students in dual degree programs are offered online only. Students should check the current Graduate Schedule of Classes to determine when courses will be offered at specific locations.

Students with at least five years of managerial experience may be eligible to complete all or part of the MBA portion of the dual degree program in an accelerated executive format; more information is on pp. 95–96.

Curriculum Requirements

Students must first complete the requirements for the MS in health care administration (detailed on p. 61).

To complete the MBA, students must then complete the following seminars:

AMBA 603D The Marketing of New Ideas (6)
AMBA 604D Technology and Operations Management (6)
AMBA 606D Organizations and the External Environment (6)
Master of Science in Management/Master of Business Administration

The purpose of the dual Master of Science (MS) in management and the Master of Business Administration (MBA) 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 MS in management and the MBA (24 credits).

Program Requirements

Students who are interested in pursuing dual degrees must meet the admission requirements of each program. Information on the MS in management may be found on p. 66; the MBA is described on p. 39.

Formats/Locations

Classes in the MS in management are offered online and at College Park and the Annapolis, Shady Grove, and Waldorf Centers. Specialty track courses may require attendance at selected sites because of enrollment requirements established by UMUC. MBA classes for students in dual degree programs are offered online only. Students should check the current Graduate Schedule of Classes to determine when courses will be offered at specific locations.

Students with at least five years of managerial experience may be eligible to complete all or part of the MBA portion of the dual degree program in an accelerated executive format; more information is on pp. 95–96.

Curriculum Requirements

Students in the dual MS in management/MBA program can choose to first complete the MS in management and then take additional credits to earn the MBA or complete the MBA and then take additional credits to earn the MS in management.

For students who have already completed the MS in management degree and have met the graduation requirements for that degree, the MBA can then be earned with the completion of 18 additional credits in seminar work. The seminars are

AMBA 604D Technology and Operations Management (6)
AMBA 606D Organizations and the External Environment (6)
AMBA 603D The Marketing of New Ideas (6)

or

AMBA 605D The Economics of Management Decisions (6)

For those who pursue the MBA first, the dual degree can be accomplished with the completion of 15 credits from an MS in management specialty track (18 credits for a specialty track in accounting). Students who declare for the dual degree before finishing the MBA have the option of using one of the MS in management track courses to replace AMBA 607B, thus completing both degrees with fewer credits.
Master of Science in Technology Management/Master of Business Administration

This dual degree program provides the student with both the intellectual depth of managing technological change associated with the Master of Science (MS) in technology management and the intellectual breadth of general business knowledge associated with the Master of Business Administration (MBA). The dual degree program requires 60 semester hours of coursework, at the completion of which both degrees are awarded.

Program Requirements

Students who are interested in pursuing dual degrees must meet the admission requirements of each program. Information on the MS in technology management may be found on p. 72; the MBA is described on p. 39.

Formats/Locations

Classes in the MS in technology management program are offered online and at College Park, Fort Meade, and the Annapolis and Shady Grove Centers. MBA classes for students in dual degree programs are offered online only. Students should check the current Graduate Schedule of Classes to determine when courses will be offered at specific locations.

Students with at least five years of managerial experience may also elect to pursue these two degrees through an accelerated executive format. Information may be found on p. 96.

Curriculum Requirements

Students in the dual MS in technology management/MBA program must first complete the MS in technology management. Please note that the requirements for the MS in technology management are somewhat different when earned as part of the dual degree program.

For the MS in technology management, students in the dual degree program must complete the following core courses:

- TMAN 611 Principles of Technology Management (3)
- TMAN 621 Systems Analysis and Operations Research (3)
- TMAN 632 Organizational Performance Management (3)
- TMAN 640 Project Management (3)
- TMAN 661 Systems Development and Management (3)
- TMAN 671 Seminar in Technology and Innovation Management (3)
For the MS in technology management, students in the dual degree program must complete six of the following elective courses:

- BIOT 610 Introduction to Bioinformatics (3)
- BIOT 640 Societal Issues in Biotechnology (3)
- BIOT 643 The Techniques of Biotechnology (3)
- CSMN 615 Hardware and Operating Systems (3)
- CSMN 636 Telecommunications and Connectivity (3)
- CSMN 661 Relational Database Systems (3)
- ECOM 610 Introduction to E-Commerce (3)
- ECOM 630 Information Risk Assessment and Security Management (3)
- ECOM 640 Internet Principles and Applications (3)
- ECOM 650 E-Commerce Applications and Operations (3)
- ECOM 660 E-Commerce Financial Management and Accounting (3)

- ENVM 644 New Technologies in Environmental Management (3)
- ENVM 649 Principles of Waste Management and Pollution Control (3)
- ENVM 650 Land and Water Resource Management (3)
- TLMN 620 Local Area Networking Systems (3)
- TLMN 645 Wireless Telecommunications Systems (3)
- TMAN 622 Systems Development, Acquisition, and Management (3)
- TMAN 623 Systems Analysis and Design (3)

For the MBA, students in the dual degree program must then take the following courses to earn the dual degrees.

- AMBA 602D The Dynamics of Individuals and Groups at Work (6)
- AMBA 603D The Marketing of New Ideas (6)
- AMBA 605D The Economics of Management Decisions (6)
- AMBA 606D Organizations and the External Environment (6)
Executive Programs

The Graduate School’s Executive Programs are designed for professionals with at least five years of managerial experience. Each class has approximately 25–30 participants who progress through the program as a group. The professional backgrounds of the class members are vital to the learning experience, which 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 issues.

Master of Business Administration

The Executive Program for the Master of Business Administration (MBA) is designed for busy professionals. This accelerated 21-month program enables career-minded individuals with at least five years of managerial experience to make full use of their management skills while meeting degree requirements. Courses are delivered through a combination of classroom seminars and online study. Special features of the Executive Program for the MBA 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.

Overview

The program consists of seven seminars. Each seminar includes examinations, papers, and/or presentations. The end-of-program project in XMBA 607 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.

Program Requirements

In addition to the general admission requirements, applicants must have a minimum of five years of managerial experience and a current position as a mid- or senior-level manager. 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 p. 30.

Formats/Locations

Executive Program classes for the MBA are held at a single UMUC site in the Washington, D.C., metropolitan area throughout the 21-month program. 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. Instruction includes lectures, case studies, structured discussions, guest speakers, videos, computer exercises, written projects, and oral presentations.

Prospective students should check the executive program Web page at info.umuc.edu/executiveprograms for the location of the next seminar.
Curriculum Requirements

Noncredit Course
All degree-seeking students are required to complete the non-credit course UCSP 610 (or 610E) Library Skills for the Information Age within their first 6 credits of study.

Core Courses
Executive students must take the following seminars:

XMBA 601 Overview of Management Theory, Strategic Thinking, and Global Management (7)
XMBA 602 Organizational Leadership, Management of Human Resources, and Business Ethics (6)
XMBA 603 Marketing, Entrepreneurship, and New Product Development (6)
XMBA 604 Technology and Operations Management (6)
XMBA 605 Financial Systems and Management Accounting (6)
XMBA 606 International Business, Trade, and Business Law (6)
XMBA 607 Strategy and Capstone Project (6)

Master of Science in Information Technology

The Executive Program for the Master of Science (MS) in information technology is 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 on-site and online classes.

Overview
The program consists of six 6-credit seminars. Each seminar includes examinations, papers, and/or presentations.

Program Requirements
In addition to the general admission requirements, applicants must have a minimum of five years of business or management experience and a current position as a mid- or senior-level manager. Qualified candidates will have a personal interview. All participants must have access to a computer and the Internet, and a working knowledge of software programs as described on p. 30.

Formats/Locations
All classes in the Executive Program for the MS in information technology are held at a single UMUC site in the Washington, D.C., metropolitan area throughout the 18-month program. 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. Instruction includes lectures, case studies, structured discussions, guest speakers, videos, computer exercises, written projects, and oral presentations.

Prospective students should check the executive program Web page at info.umuc.edu/executiveprograms for the location of the next seminar.

Technical Requirements
All participants are required to have an Internet-ready laptop computer.

Curriculum Requirements

Noncredit Course
All degree-seeking students are required to complete the non-credit course UCSP 610 (or 610E) Library Skills for the Information Age within their first 6 credits of study.
Core Courses

Executive students must take the following seminars:

- XMIT 601 IT and the Industry and Strategic Management (6)
- XMIT 602 Human Resources, Leadership, and Project/Financial Management (6)
- XMIT 603 Advanced Topics in IT and Systems Security and Risk Management (6)
- XMIT 604 Computing and Software Technology (6)
- XMIT 605 Data Communications and Internet Technologies (6)
- XMIT 606 Systems Engineering and Capstone (6)

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 Program for the Master of Science (MS) in technology management covers three important competency areas in a technology-driven, globally competitive business environment: strategic management, systems management, and operations management. The 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.

Overview

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.

Program Requirements

In addition to the general admission requirements, applicants must have at least five years of business or management experience and a current position as a mid- or senior-level manager. 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 p. 30.

Formats/Locations

All classes in the Executive Program for the MS in technology management are held at a single UMUC site in the Washington, D.C., metropolitan area throughout the 18-month program. 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. Instruction includes lectures, case studies, structured discussions, guest speakers, videos, computer exercises, written projects, and oral presentations. Students are encouraged to bring laptop computers to class.

Prospective students should check the executive program Web page at info.umuc.edu/executiveprograms for the location of the next seminar.

Curriculum Requirements

Noncredit Course

All degree-seeking students are required to complete the noncredit course UCSP 610 (or 610E) Library Skills for the Information Age within their first 6 credits of study.

Core Courses

Executive students must take the following seminars:

- XTMN 601 Technology Overview and Strategic Management (6)
- XTMN 602 Marketing and Financing Technology-Based Ventures (6)
- XTMN 603 Program and Operations Research (6)
- XTMN 604 Electronic Commerce (6)
- XTMN 605 Operational Performance and Human Resources (6)
- XTMN 606 Business Law and Global Management—Capstone (6)

Course descriptions are found on pp. 110–56.
Executive Dual Degree Programs

Graduates of selected UMUC master’s degree programs (whether obtained through the executive or standard format) can also obtain a Master of Business Administration (MBA) 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 degree program before they can earn an MBA. To obtain the MBA, students must then complete 18–24 additional credits from the Executive Program for the MBA. This dual degree option through Executive Programs is available to graduates of the following UMUC programs: Master of International Management, Master of Science in e-commerce, Master of Science in health care administration, Master of Science in management, or Master of Science in technology management.

All of the requirements for both degrees must be completed within seven years. All MBA degree course work must be completed within six years.

Program Requirements

In addition to the general admission requirements, applicants must meet the requirements listed on p. 92 for the Executive Program for the MBA.

Formats/Locations

The Executive Program for the MBA is offered in an accelerated format that combines classroom seminars with online study. The Saturday seminars are offered at a single UMUC site in the Washington, D.C., metropolitan area. Emphasis is placed on speaking and formal presentation skills in the classroom seminars and on writing and analytical skills in the online course work.

Up-to-date schedules and course locations can be found online at www.umuc.edu/grad/gsmt/gsmt/home.html.

Curricula

Master of International Management/Master of Business Administration

Graduates of the Executive Program for the MIM* must complete the following seminars from the Executive Program for the MBA:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>XMBA 603</td>
<td>Marketing, Entrepreneurship, and New Product</td>
</tr>
<tr>
<td></td>
<td>Development (6)</td>
</tr>
<tr>
<td>XMBA 604</td>
<td>Technology and Operations Management (6)</td>
</tr>
<tr>
<td>XMBA 605</td>
<td>Financial Systems and Management Accounting (6)</td>
</tr>
</tbody>
</table>

Graduates of the standard format program for the MIM must complete the following seminars from the Executive Program for the MBA:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>XMBA 601</td>
<td>Overview of Management Theory, Strategic Thinking,</td>
</tr>
<tr>
<td></td>
<td>and Global Management (7)</td>
</tr>
<tr>
<td>XMBA 604</td>
<td>Technology and Operations Management (6)</td>
</tr>
</tbody>
</table>

Graduates of the finance track must also complete the following course:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>XMBA 603</td>
<td>Marketing, Entrepreneurship, and New Product</td>
</tr>
<tr>
<td></td>
<td>Development (6)</td>
</tr>
</tbody>
</table>

Graduates of the commerce and marketing tracks must also complete the following course:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>XMBA 605</td>
<td>Financial Systems and Management Accounting (6)</td>
</tr>
</tbody>
</table>

Master of Science in E-Commerce/Master of Business Administration

Participants in the dual MS in e-commerce/MBA program can complete the MS in e-commerce and then take additional credits to earn the MBA. Participants who have already completed the MS in e-commerce program and met the graduation requirements for that degree can then earn the MBA with the completion of 24 additional credits in the Executive Program for the MBA.

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* No longer offered.

Course descriptions are found on pp. 110–56.
The required seminars are

XMBA 602 Organizational Leadership, Management of Human Resources, and Business Ethics (6)
XMBA 604 Technology and Operations Management (6)
XMBA 605 Financial Systems Management Accounting (6)
XMBA 606 International Business, Trade, and Business Law (6)

**Master of Science in Health Care Administration/Master of Business Administration**

Participants in the dual MS in health care administration/MBA program can complete the MS in health care administration and then take additional credits to earn the MBA. Participants who have already completed the MS in health care administration program and met the graduation requirements for that degree can then earn the MBA with the completion of 18 additional credits in the Executive Program for the MBA.

The required seminars are

XMBA 603 Marketing, Entrepreneurship, and New Product Development (6)
XMBA 604 Technology and Operations Management (6)
XMBA 606 International Business, Trade, and Business Law (6)

**Master of Science in Management/Master of Business Administration**

Participants in the dual MS in management/MBA program can complete the MS in management and then take additional credits to earn the MBA. Participants who have already completed the MS in management program (whether in the executive format* or the standard format) and met the graduation requirements for that degree can then earn the MBA with the completion of 18 additional credits in the Executive Program for the MBA.

The required seminars are

XMBA 604 Technology and Operations Management (6)
XMBA 606 International Business, Trade, and Business Law (6)

Graduates of the the finance track in the regular format for the MS in management must also complete the following course:

XMBA 603 Marketing, Entrepreneurship, and New Product Development (6)

Graduates of the the marketing track in the regular format for the MS in management must complete the following course:

XMBA 605 Financial Systems Management Accounting (6)

Graduates of all other tracks in the regular format for the MS in management must complete one of the following courses:

XMBA 603 Marketing, Entrepreneurship, and New Product Development (6)

or

XMBA 605 Financial Systems Management Accounting (6)

**Master of Science in Technology Management/Master of Business Administration**

Graduates of the Executive Program for the MS in technology management must complete the following seminars from the Executive Program for the MBA:

XMBA 602 Organizational Leadership, Management of Human Resources, and Business Ethics (6)
XMBA 605 Financial Systems and Management Accounting (6)
XMBA 606 International Business, Trade, and Business Law (6)

Graduates of the standard format program for the MS in technology management must complete the following seminars from the Executive Program for the MBA:

XMBA 602 Organizational Leadership, Management of Human Resources, and Business Ethics (6)
XMBA 603 Marketing, Entrepreneurship, and New Product Development (6)
XMBA 605 Financial Systems and Management Accounting (6)
XMBA 606 International Business, Trade, and Business Law (6)

* No longer offered.
Certificate Programs

UMUC offers more than 30 graduate certificate programs in the following fields: distance education, electronic commerce, general management, international management, information technology systems, and management of technological systems. Two certificates are also offered in an accelerated executive format. Each certificate requires from 12 to 24 credits of coursework. The certificates are the ideal credential for individuals who do not wish to pursue a 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 graduate credits that can be applied toward the parallel master’s degree program. Students have three years to complete any certificate that requires up to 18 credits and five years to complete any certificate that requires more than 18 credits.

Program Requirements

Admission requirements for certificate students are the same as those for degree-seeking students. It is strongly recommended that certificate students seek the advice of the appropriate program advisor before registering to help ensure readiness for selected courses.

All graduate students must successfully complete UCSP 610 Library Skills for the Information Age within their first 6 credits of study.

Certificates in Distance Education

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 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 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 in Developing Countries is a certificate program within the Master of Distance Education program offered by UMUC and Oldenberg University in Germany. Consisting of four online courses, it examines the purposes for which distance education has been used and the audiences it has reached and allows the student to explore organizational models for distance education at various educational levels. The roles played by international agencies are analyzed. It enables the student to evaluate the range of educational technologies that assist institutions in reaching various off-campus audiences. Also, it explores the changing role of the private sector, the role of conventional universities in relation to e-learning, and the new international players.

Students must take the following courses:

OMDE 601 Foundations of Distance Education (3)
OMDE 606 The Management of Distance Education 1: Cost Analysis (3)
OMDE 625 National and International Policies for Distance Education (3)
OMDE 626 Technologies for Distance Education in Developing Countries (3)
Distance Education and Technology (12 credits)
The certificate in Distance Education and Technology is intended to place the study of contemporary educational technologies in the context of the goals of educational and training organizations and to provide students with some in-depth knowledge and experience with the primary distance education technologies in use today.

Students must take the following courses:
- OMDE 601 Foundations of Distance Education (3)
- OMDE 603 Technology in Distance Education (3)

Students must take two of the following courses:
- OMDE 620 Learning and Training with Multimedia (3)
- OMDE 623 Web-Based Learning and Teaching and the Virtual University (3)
- OMDE 631 Advanced Technology in Distance Education 1—Synchronous Learning Systems (3)
- OMDE 632 Advanced Technology in Distance Education 2—Asynchronous Learning Systems (3)

Foundations of Distance Education (12 credits)
The certificate in Foundations of Distance Education 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.

Students must take the following courses:
- OMDE 601 Foundations of Distance Education (3)
- OMDE 606 The Management of Distance Education 1: Cost Analysis (3)
- OMDE 608 Student Support in Distance Education and Training (3)
- OMDE 620 Training and Learning with Multimedia (3)

Library Services in Distance Education (12 credits)
The certificate in Library Services in Distance Education will provide in-depth information in the history, theory, and organizational structure of distance education, and the role of library services within organizations. Emphasis is on the selection and application of appropriate technologies, particularly with reference to library services.

Students must take the following courses:
- OMDE 601 Foundations of Distance Education (3)
- OMDE 603 Technology in Distance Education (3)
- OMDE 611 Distance Education Library Services (3)

Students must also choose one elective from the Master of Distance Education program.

Teaching at a Distance (12 credits)
The certificate in Teaching at a Distance is intended for people seeking to teach at a distance in their organizations. It 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.

Students must take the following courses:
- OMDE 601 Foundations of Distance Education (3)
- OMDE 621 Training at a Distance (3)
- OMDE 622 The Business of Distance Education (3)

Students must also choose one elective from the Master of Distance Education program.
Certificate in 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.

Students must take the following courses:

- ECOM 610 Introduction to E-Commerce (3)
- ECOM 620 E-Marketing (3)
- ECOM 630 Information Risk Assessment and Security Management (3)
- ECOM 650 E-Commerce Applications and Operations (3)
- ECOM 660 E-Commerce Financial Management and Accounting (3)

Certificate in General Management

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. Students entering this certificate program must meet all requirements for admission to the MS in accounting and financial management program.

Students must take the following courses:

- ACCT 609 E-Commerce Accounting (3)
- ACCT 610 Financial Accounting (3)
- ACCT 611 Management Accounting (3)
- ACCT 614 Accounting Information Systems (3)

Accounting and Financial Management—Operations (12 credits)

This certificate emphasizes an understanding of how the World Wide Web and information systems affect the accounting and strategic direction of organizations. Students entering this certificate program must meet all requirements for admission to the MS in accounting and information technology program.

Students must take the following courses:

- ACCT 609 E-Commerce Accounting (3)
- ACCT 614 Accounting Information Systems (3)
- ADMN 641 Information Systems Management and Integration (3)
- ADMN 645 Information Technology, the CIO, and Organizational Transformation (3)
**Accounting and Information Technology (12 credits)**

This certificate emphasizes an understanding of how the World Wide Web and information systems affect accounting. Focus is on the development of systems and managing the risk and security related to systems. Students entering this certificate program must meet all requirements for admission to the MS in accounting and information technology program.

Students must take the following courses:

- ACCT 609 E-Commerce Accounting (3)
- ACCT 614 Accounting Information Systems (3)
- CSMN 635 Systems Development and Project Control (3)

Students must take one of the following courses:

- CSMN 655 Information Risk Assessment and Security Management (3)
- ECOM 630 Information Risk Assessment and Security Management (3)

**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 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 human resource management, will find the information practical.

Students must take the following courses:

- ADMN 625 Organizational Communication and Group Development (3)
- ADMN 661 Employee Relations (3)
- ADMN 662 Issues and Practices in Human Resource Management (3)
- ADMN 664 Organizational Development and Change (3)

*Note: ADMN 662 is recommended as the first course in human resource management.*

**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.

Students must take the following courses in the order indicated:

- ADMN 631 Financial Management in Organizations (3)
- ADMN 634 Investment Valuation (3)

Students must choose two of the following courses:

- ADMN 632 Financial Management of Current Operations (3)
- ADMN 633 Capital Markets, Institutions, and Long-Term Financing (3)
- ADMN 639 Multinational Financial Management (3)

Students must then take the following course as the final class:

- ADMN 655 Strategic Financial Management (3)

**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 to complete either the MS in management or MS in health care administration degree. The six courses selected by the certificate student represent the full spectrum of updated health care administration.

Students must take the following courses:

- HCAD 620 The U.S. Health Care System (3)
- HCAD 621 Legal Aspects of Health Care Administration (3)
- HCAD 660 Health Care Institutional Organization and Management (3)

Course descriptions are found on pp. 110–56.
Students must choose three of the following courses:

- HCAD 610 Information Technology for Health Care Administration (3)
- HCAD 630 Public Health Administration (3)
- HCAD 640 Financial Management for Health Care Organizations (3)
- HCAD 670 Long-Term Care Administration (3)
- HCAD 680 Special Topics in Health Care Administration (3)

**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).

Students must take the following courses:

- ADMN 638 Research Methods for Managers (3)
- ADMN 686 Marketing Management (3)
- ADMN 688 Marketing Intelligence and Research Systems (3)
- ADMN 689 Integrated Direct Marketing (3)

*Note:* Students are recommended to take ADMN 686 first and take ADMN 638 before enrolling in ADMN 688 and 689.

**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.

Students must take the following courses:

- ADMN 622 Integrative Supply Chain Management (3)
- ADMN 623 Contemporary Logistics (3)
- ADMN 628 Contract Pricing and Negotiations (3)
- ADMN 638 Research Methods for Managers (3)

**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, 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.

Students must take the following courses:

- ADMN 625 Organizational Communication and Group Development (3)
- ADMN 635 Organizational Leadership and Decision Making (3)

Students must choose one of the following courses:

- ADMN 662 Issues and Practices in Human Resource Management (3)
- ADMN 664 Organizational Development and Change (3)

Students must choose two of the following courses:

- ADMN 601 The Manager in a Technological Society (3)
- ADMN 659 Strategic Management in Not-for-Profit Organizations (3)
- ADMN 662 Issues and Practices in Human Resource Management (3)
- ADMN 664 Organizational Development and Change (3)
- ECOM 610 Introduction to E-Commerce (3)
- TMAN 612 Financial Management for Technology Managers (3)

**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 nonprofit strategic management.

Course descriptions are found on pp. 110–56.
Students must take the following courses:

ADMN 631  Financial Management in Organizations (3)
ADMN 633  Capital Markets, Institutions, and Long-Term Financing (3)
ADMN 654  Not-for-Profit Financial Management (3)
ADMN 659  Strategic Management in Not-for-Profit Organizations (3)

**Procurement and 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. Major topics include the foundations of pricing and negotiations, basic aspects of contracting, procurement of services and products, aspects of commercial transactions, logistics, and materials management.

Students must take the following courses:

ADMN 626  Purchasing and Materials Management (3)
ADMN 627  Legal Aspects of Contracting (3)
ADMN 628  Contract Pricing and Negotiation (3)
ADMN 629  Strategic Purchasing and Logistics (3)
ADMN 660  Commercial Transactions: Law, Management, and Technology (3)

**Public Relations (15 credits)**

The certificate in Public Relations provides students with 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.

Students must take the following courses:

PRPA 601  Public Relations Theory and Practice (3)
PRPA 602  Media Communications Techniques (3)
PRPA 603  Public Relations Research (3)
PRPA 604  Public Relations Law and Ethics (3)
PRPA 610  Crisis Management Seminar (3)

*Note:* Students must complete PRPA 601 and 602 as their first two courses.

**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.

Students must take the following courses:

ADMN 641  Information Systems Management and Integration (3)
ADMN 643  Systems Analysis and Design (3)
ADMN 644  Decision Support Systems and Expert Systems (3)

Students must choose one of the following:

ADMN 640  Information Systems for Managers (3)

Any CSMN course

Any TLMN course

*Note:* ADMN 640 is recommended for students with little knowledge of management information systems. Students with some knowledge of management information systems are encouraged to choose a CSMN or TLMN course.
Certificates in Information Technology Systems

The following certificates provide the technical and quasi-technical foundations for knowledge workers in the fields of software development management, database systems technology, information assurance, information resources management, applied computer systems, software engineering, and telecommunications.

Applied Computer Systems (15 credits)

The certificate in Applied Computer Systems is intended for information technology professionals who desire a background in the underlying computer hardware, operating systems, and languages that are the building blocks of information systems. This is the most technically oriented of the Information Technology Systems certificates and has a prerequisite of at least one semester of undergraduate calculus. Familiarity with a high-level programming language is desirable. All courses apply to the MS in computer systems management degree.

Students must take the following course:

CSMN 601 Issues, Trends, and Strategies for Computer Systems Management (3)

Students must choose three of the following courses:

CSMN 615 Hardware and Operating Systems (3)
CSMN 616 Distributed Computing (3)
CSMN 617 Principles of Programming Languages (3)
CSMN 618 Knowledge-Based Systems (3)

Students must choose one elective from CSMN, TLMN, or TMAN courses.

Database Systems Technologies (15 credits)

The certificate in Database Systems Technologies is geared towards those IT workers who wish to upgrade their skills by gaining familiarity with the most popular applications software genre in use, the database management systems and data warehousing systems. All courses apply to the MS in computer systems management degree.

Students who do not have advanced standing must complete the following course:

CSMN 661 Relational Database Systems (3)

All students must complete the following course:

CSMN 662 Advanced Relational/Object-Relational Database Systems (3)

Students who do not have advanced standing must choose three of the following courses; students with advanced standing must choose four.

CSMN 663 Distributed Database Management Systems (3)
CSMN 664 Object-Oriented Database Systems (3)
CSMN 665 Data Warehouse Technologies (3)
CSMN 666 Database Systems Administration (3)
CSMN 667 Data Mining (3)
CSMN 668 Database Security (3)

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 certificate provides a thorough knowledge base for managers and technology professionals concerned with the development and operation of secure information systems and 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.

Students must take the following courses:

CSMN 655 Information Risk Assessment and Security Management (3)
CSMN 681 Cryptology and Data Protection (3)
CSMN 683 Intrusion Detection, Incident Response, and Computer Forensics (3)
CSMN 685 Security Policy, Ethics, and the Legal Environment (3)
TLMN 672 Network and Internet Security (3)

Course descriptions are found on pp. 110–56.
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 MS in computer systems management degree.

Students must take the following courses:
- CSMN 601 Issues, Trends, and Strategies for Computer Systems Management (3)
- CSMN 635 Systems Development and Project Control (3)
- CSMN 636 Telecommunications and Connectivity (3)
- ITSM 637 IT Acquisitions Management (3)

Students must also choose one elective from CSMN, TLMN, or TMAN courses.

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, telecommunications, and engineering principles. Students entering this certificate program must meet all the requirements for admission to the MS in information technology program. All courses apply to the MS in information technology degree.

Students must take the following course:
- MSIT 610 Foundations of Information Technology (3)

Students must choose four of the following courses:
- MSIT 620 Computer Concepts (3)
- MSIT 630 Concepts in Software-Intensive Systems (3)
- MSIT 640 Data Communications and Networks (3)
- MSIT 650 Systems Engineering (3)
- MSIT 660 Internet Technology (3)

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 MS in computer systems management degree.

Students must take the following course:
- CSMN 601 Issues, Trends, and Strategies for Computer Systems Management (3)

Students must choose three of the following courses:
- MSWE 603 Systems Engineering (3)
- MSWE 635 Software Systems Development (3)
- MSWE 645 System and Software Standards and Requirements (3)
- MSWE 646 Software Design and Implementation (3)
- MSWE 647 Software Verification and Validation (3)
- MSWE 648 Software Maintenance (3)

Students must also choose one elective from CSMN, TLMN, or TMAN courses.

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. Students entering this certificate program must meet all of the requirements for admission to the Master of Software Engineering (MSwE) program. All courses apply to the MSwE degree.

Students must take the following course:
- MSWE 601 Issues in Software Engineering (3)
Students must complete three of the following courses.

Courses recommended for those working in the front end of the system life cycle:

- MSWE 603 Systems Engineering (3)
- MSWE 635 Software Systems Development (3)
- MSWE 645 System and Software Standards and Requirements (3)

Courses recommended for those working in the back end of the system life cycle:

- MSWE 646 Software Design and Implementation (3)
- MSWE 647 Software Verification and Validation (3)
- MSWE 648 Software Maintenance (3)

To complete the required 15 credits, students must also choose one course from any of the aforementioned courses not already taken or from the electives listed on p. 79.

**Telecommunications Management (15 credits)**

The certificate in Telecommunications Management provides the technical manager of IT professionals with the technical and management skills needed to plan, acquire, operate, evaluate, and upgrade telecommunications systems in an environment of IT convergence and constant change. One semester of undergraduate calculus and one semester of statistics are prerequisites for this certificate. All courses apply to the MS in telecommunications management degree.

Students must take the following courses:

- ITSM 637 IT Acquisitions Management (3)
- TLMN 602 Telecommunications Industry: Structure and Environment (3)
- TLMN 641 Network Management and Design (3)
- TLMN 655 Systems Integration for Telecommunications Managers (3)

Students must choose one of the following courses:

- TLMN 610 Data Communications Systems (3)
- TLMN 620 Local Area Networking Systems (3)
- TLMN 625 Wide Area Networking Systems (3)
- TLMN 630 Satellite Communication Systems (3)

*T Includes a trip to Europe.

**Certificates in International Management**

**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 certificate is intended for U.S. company managers who seek to market goods and services outside the United States.

Students must take the following courses:

- IMAN 620 International Marketing Research and Analysis (3)
- IMAN 625 International Trade and Trade Policy (3)
- IMAN 640 International Marketing Management (3)

Students must choose one of the following courses:

- IMAN 661 Area Studies: Business Strategies for Europe (3)*
- ADMN 687 Market Segmentation and Penetration (3)
- ADMN 689 Integrated Direct Marketing (3)

*Note: The first course taken should be IMAN 640 and the remaining courses may be taken in any order.

**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 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.

Students must take the following courses:

- IMAN 601 Strategic Management in a Global Environment (3)
- IMAN 615 Foreign Investment and Strategic Alliances (3)
- IMAN 625 International Trade and Trade Policy (3)

*Includes a trip to Europe.*
Students must choose one of the following courses:

- IMAN 635 Managing Country Risk (3)
- IMAN 640 International Marketing Management (3)
- IMAN 645 The International Legal and Tax Environment (3)

Note: The first course taken should be IMAN 601 followed by IMAN 615. The remaining courses may be taken in any order.

Certificates in Management of Technological Systems

Biotechnology Management (15 credits)

The certificate in Biotechnology Management is designed to provide the student with a solid foundation in the technical, business, and ethical issues facing the industry today.

Students must take the following courses:

- BIOT 640 Societal Issues in Biotechnology (3)
- BIOT 641 Commercializing Biotechnology in Early-Stage Ventures (3)
- BIOT 643 The Techniques of Biotechnology (3)
- BIOT 644 The Regulatory Environment of Biotechnology (3)
- BIOT 610 Introduction to Bioinformatics (3)

Energy Resources Management and Policy (15 credits)

The certificate in Energy Resources Management and Policy is intended to strengthen the knowledge of energy-related matters of practicing professionals. The course of study provides a foundation for managing complex issues dealing with the availability and use of energy resources, energy economics, alternate energy resources, energy policy development, and energy conservation.

Students must take the following courses:

- ENER 601 Energy Resources (3)
- ENER 602 Energy Economics (3)
- ENER 603 Energy Infrastructure Management (3)
- ENER 604 New Technologies in Energy Management (3)
- ENVM 646 Environmental/Energy Law and Policy Development (3)

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.

Students must take the following courses:

- ENVM 641 Environmental Auditing (3)
- ENVM 643 Environmental Communications and Reporting (3)
- ENVM 644 New Technologies in Environmental Management (3)
- ENVM 646 Environmental/Energy Law and Policy Development (3)
- ENVM 647 Environmental Risk Assessment (3)

Project Management (15 credits)

The graduate certificate in Project Management is designed to facilitate the learning and application of skills that are critical in modern project management in both public- and private-sector organizations. The in-depth and practical courses help students to develop the knowledge and skills required for effectively managing different types of projects. In addition, this graduate certificate program helps students prepare for the Project Management Professional certification examination offered by the Project Management Institute.

Students must take the following courses:

- PMAN 634 Program and Project Management (3)
- PMAN 635 Techniques of Scheduling and Resource Allocation (3)
- PMAN 636 Legal Aspects of Contracting (3)
- PMAN 637 Risk Management: Tools and Techniques (3)
- PMAN 638 Communication, Negotiation, and Conflict Resolution (3)
Technology Systems Management (18 credits)

The certificate in Technology Systems Management is available for students who are interested in the management of technology systems, but are not interested in pursuing a degree at the time. The design, development, or acquisition of modern complex systems requires skills and background in both technical and management topics. The certificate program provides a basic approach to systems management.

Students must take the following courses:

- TMAN 611 Principles of Technology Management (3)
- TMAN 612 Financial Management for Technology Managers (3)
- TMAN 614 Strategic Management of Technology and Innovation (3)
- TMAN 621 Systems Analysis and Operations Research (3)
- TMAN 622 Systems Development, Acquisition, and Management (3)
- TMAN 632 Organizational Performance Management (3)

Executive Certificate Programs

The Executive Programs offer a combination of online and classroom-based instruction.

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 government and private-sector IT professionals—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.

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

Students must take the following courses:

- XMIT 601 IT and the Industry and Strategic Management (6)
- XMIT 602 Human Resources, Leadership, and Program/Financial Management (6)
- XMIT 603 Advanced Topics in IT and Systems Security and Risk Management (6)
- XCIO 693 CIO Processes (6)

Strategic Management of Technology and Innovation (12 credits)

This six-month certificate is designed to provide participants with the critical skills needed to craft an integrated technology and business strategy plan for their organizations. Courses are delivered through a combination of classroom-based seminars and online study, and develop the principles, implications, and role of technology innovation in organizational development and global competition. Seminars build 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 Master of Science in technology management degree.

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

Students must take the following courses:

- XTMN 601 Technology Overview and Strategic Management (6)
- XTMN 602 Marketing and Financing Technology-Based Ventures (6)
UMUC now offers an accelerated alternative route to teacher certification in Maryland for career changers with bachelor’s degrees.

The Resident Teacher Certification program includes 9 credits of coursework, which are completed through online study during a 14-week spring semester, a summer residential experience in a local school system, and one year of teaching in a UMUC-approved school. Successful candidates are eligible for immediate hire. Credits may be applied to the Master of Arts in Teaching or the Master of Education programs at UMUC.

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.

Certification is available in biology, chemistry, computer science, earth/space science, elementary education, English as a second language, French, history, mathematics, physics, social studies, and Spanish.

Program Requirements
Admission to the program requires at least a 3.0 GPA overall and in the major field of study, qualifying scores on the Praxis I and Praxis II (content knowledge) examinations, and an interview.

Formats/Locations
Classes in the Resident Teacher Certification program are currently offered online. The practicum experience must take place in a UMUC-approved school.

Grant Funding
Grant funding for candidates interested in teaching in Prince George’s County Public Schools is currently available through MARCO (Maryland’s Alternative Route to Certification Options), a UMUC partnership with the Maryland State Department of Education and Prince George’s County Public Schools. Candidates interested in applying directly to MARCO should visit the County's Resident Teacher Certification Website at www.residentteacherprogram.org.
Curriculum Requirements

Noncredit Course
All degree-seeking students are required to complete the non-credit course UCSP 610 Library Skills within their first 6 credits of study.

Core Course
OMAT 615 Resident Teacher Certification Program (9)

Practicum
A residential teaching practicum and one year of satisfactory teaching in a UMUC-approved school are required. During the first year of teaching, students will complete the Maryland state required reading courses (OMAT 607 and 608 fulfill this requirement).
Course Descriptions

The Unit of Credit

The unit of credit is the semester hour. One semester hour is awarded on the basis of either of two sets of criteria, as follows:

- At least 15 hours (50 minutes each) of actual class meeting, or the equivalent in guided learning activity (exclusive of registration and study days, holidays, and final examinations);
- At least 30 hours (50 minutes each) of supervised laboratory or studio work (exclusive of registration and study days, holidays, and final examinations).

Prerequisites

Prerequisites, normally stated in terms of numbered courses, represent the level of knowledge a student should have acquired before enrolling in a given course. It is each student’s personal responsibility to make certain he or she is academically prepared to take a course. Faculty members are not expected to repeat material listed as being prerequisite.

ACCT 608 Fraud Detection and Accounting Ethics (3)

A critical competency for the 21st-century accountant is the ability to evaluate and analyze the various aspects of fraud prevention and detection in a strategic context. Specifically, the nature of fraud, elements of fraud, fraud prevention, fraud detection, fraud investigation, use of controls to prevent fraud, and methods of fraud resolution are examined in this course. An emphasis is placed on the employment of forensic accounting techniques to analyze what is behind the data being generated by the accounting system, to detect internal control weaknesses and to map out a fraud investigation program. The role of accounting ethics is explored throughout the course in detail and considered in the context of laws, regulations, and the organization’s culture.

ACCT 609 E-Commerce Accounting (3)

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 (1) identifying tax choices, payment methods, and strategic e-business alternatives; (2) managing Web security risks for clients; and (3) 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.
ACCT 610 Financial Accounting (3)
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 accounting 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.

ACCT 611 Management Accounting (3)
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.

ACCT 612 Auditing Process (3)
(Open only to students enrolled in the accounting programs or track.) 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.

ACCT 613 Federal Income Taxation (3)
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 determine 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.

ACCT 614 Accounting Information Systems (3)
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.

ACCT 615 Accounting Capstone (3)
Prerequisite: Completion of five accounting courses and all core courses except ADMN 651. 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.
ADMN 601 The Manager in a Technological Society (3)
This course presents an overview of the fundamental concepts of organizational theory and design in the context of a postindustrial 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.

ADMN 619 Financial Management and Accounting Capstone (3)
This is the capstone course for the Master of Science in accounting and financial management. Subject matter from the financial management and accounting 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.

ADMN 622 Integrative Supply Chain Management (3)
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 procurement. 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.

ADMN 623 Contemporary Logistics (3)
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; warehousing and distribution management; recycling; and other logistical strategies, techniques, and methodologies.

ADMN 625 Organizational Communication and Group Development (3)
(Also offered with ADMN 635 as a cluster course.) 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 626 Purchasing and Materials Management (3)
An overview of the procurement and contracting cycle and of other organizational functions is provided. 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.

ADMN 627 Legal Aspects of Contracting (3)
(Also listed as PMAN 636.) 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 Contract Pricing and Negotiation (3)

Techniques for planning, conducting, and managing negotiated procurement 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 Strategic Purchasing and Logistics (3)

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 630 Financial Decision Making for Managers (3)

(Not open to students in the financial management track or program.) Prerequisite: Knowledge of the materials covered in UCSP 620 and 621, including the concepts of opportunity cost, the time value of money, financial accounting, and financial analysis. 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 from product pricing and budgeting to project analysis and performance measurement. A variety of decision-making tools are employed in the analysis of these decisions. Break-even analysis is used in profit planning. The cost of individual products and services is determined by activity-based costing procedures. Product mix and resource allocation issues are examined using linear programming. Discounted cash flow techniques are used to compare alternative investment opportunities, and the balanced scorecard provides a framework with which organizational performance can be evaluated. In addition, contemporary managerial systems, such as target costing and kaizen costing, are explored as a means of improving operational efficiency. Students may receive credit for only one of the following courses: ADMN 630 or ADMN 631.

ADMN 631 Financial Management in Organizations (3)

(For students in the financial management track or program. Students without recent coursework in accounting or economics are strongly advised to complete UCSP 620 and 621 first.) This course 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 may receive credit for only one of the following courses: ADMN 630 or ADMN 631.

ADMN 632 Financial Management of Current Operations (3)

Prerequisite: ADMN 631. 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.

ADMN 633 Capital Markets, Institutions, and Long-Term Financing (3)

Prerequisite: ADMN 631. This course concerns the long-term capital needs of an organization and the roles of the capital markets and institutions. The course will explore the financial environment of organizations, the role of the Federal Reserve and financial intermediaries, capital and money markets, options and futures markets, the capital budgeting decision process, capital structure management, dividend and share repurchase policy, and investment banking and restructuring. Various types of long-term funding sources, including term loans, debt and equity securities, and leasing, are analyzed. Alternate policies with regard to financial leverage, capital structure, dividends, and the issuance of preferred stock, warrants and convertible debt are evaluated. Mergers, leveraged buyouts, and divestitures are examined as special situations to create value.
ADMN 634 Investment Valuation (3)
Prerequisite: ADMN 631. This course provides an in-depth exploration and application of valuation models to support managerial decision making in a strategic framework. The theory, concepts, and principles underlying the valuation of firms, business/product lines, and mergers and acquisitions are addressed using extended exercises and applications. The primary model employed as a learning tool will be the discounted cash-flow model. Students will explore the financial drivers of value, including assessing and determining risk, competitive advantage period, and sales and earnings growth estimates. Other valuation techniques using earnings, revenues, and price/earnings multiples will be discussed and applied in selected examples.

ADMN 635 Organizational Leadership and Decision Making (3)
(Also offered with ADMN 625 as a cluster course.) 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 636 Cost Management (3)
Prerequisite: ADMN 631. 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.

ADMN 637 Legal Aspects of Management (3)
This course 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 nonunion 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.

ADMN 638 Research Methods for Managers (3)
Prerequisite: Knowledge of the materials covered in USCP 630, 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. 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.

ADMN 639 Multinational Financial Management (3)
Prerequisite: ADMN 631. 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.
ADMN 640 Information Systems for Managers (3)
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 Information Systems Management and Integration (3)
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 Systems Analysis and Design (3)
This course is designed to combine the areas of computer technology, systems analysis, systems design, and software application construction to aid the student in learning current techniques and practices in the requirements specification, analysis, and design of information system applications. The course is oriented toward the formal specification of the information system’s logical and physical analysis and design.

ADMN 644 Decision Support Systems and Expert Systems (3)
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 Information Technology, the CIO, and Organizational Transformation (3)
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.

ADMN 650 Organizational Decision Making (3)
(Open only to students who have already completed ADMN 603.) Prerequisites: ADMN 601, 603, 625, 630 or 631, 635, and 638. This course is a capstone seminar in which the applied behavioral aspects and the impact of the continuous changes affecting postindustrialized society are linked to the key organizational function known as decision making. The course integrates previous coursework in organizational structure, global competition, technology impacts, applied research, strategic planning, finance issues, communication theory, and organizational leadership. Problem solving and creativity models as related to effective, practical, and applied decision making in organizations are discussed. Students focus on effective decision strategies, ensuring decision quality, differences between group and individual decision making, and a variety of constraints facing decision makers. Utilizing a case-study approach to integrate earlier coursework, the course enhances decision-making skill by providing students with the opportunity to analyze the effects of various decision strategies on organizational outcomes. Moreover, students learn to use technology to enhance their research and decision-making skills.

ADMN 651 Strategic Management Capstone (3)
Prerequisite: Completion of 30 credits, including all core courses. 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 are 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.
ADMN 654 Not-for-Profit Financial Management (3)

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.

ADMN 655 Strategic Financial Management (3)

(Open only to students in the financial management track of the MS in management program and the international finance track of the MIM program). Prerequisites: ADMN 631, 632, 633, 634, and 639. This is an integrative course, 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; 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.

ADMN 656 Not-for-Profit Organizations and Issues (3)

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.

ADMN 657 Not-For-Profit Law and Governance (3)

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 Marketing, Development, and Public Relations (3)

Principles and practices required to develop and promote the products, services, positions, and image of not-for-profit organizations are considered. Fund-raising 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 Strategic Management in Not-for-Profit Organizations (3)

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.

ADMN 660 Commercial Transactions: Law, Management, and Proprietary Rights (3)

Recommended: ADMN 627. 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.
ADMN 661 Employee Relations (3)
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 employee relations 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 Issues and Practices in Human Resource Management (3)
(Also offered with ADMN 667 as a cluster course.) 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.

ADMN 663 Job Analysis, Assessment, and Compensation (3)
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 Organizational Development and Change (3)
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 Current Perspectives in Training and Development (3)
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 Recruitment and Selection (3)
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 Managing Global Teams (3)
(Also offered with ADMN 662 as a cluster course.) Prerequisite or corequisite: ADMN 662. This seminar investigates key human resource management 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.
ADMN 668 Human Resource Technologies (3)
Recommended: ADMN 662. This graduate-level course provides an overview of leading human resource (HR) technologies and how they should be selected, implemented, managed, and evaluated. This course 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. The course addresses funding needs for a technology-enabled HR 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.

ADMN 685 Strategic Market Planning (3)
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 Marketing Management (3)
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.

ADMN 687 Market Segmentation and Penetration (3)
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.

ADMN 688 Marketing Intelligence and Research Systems (3)
Recommended: ADMN 638. 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, including the survey, observational, and experimental methods used in assessing and segmenting markets, are presented. 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.

ADMN 689 Integrated Direct Marketing (3)
Prerequisite: ADMN 638 or appropriate background in statistics. 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, and cost per response.
ADMN 690 Management Project (3)
Prerequisite: ADMN 651. 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 seven-year time limit to complete the management project.

AMBA 600 MBA Fundamentals (1)
This 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 The Role of the Manager and Organizations in Society (6)
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, and evolving business models.

AMBA 602 The Dynamics of Individuals and Groups at Work (6)
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 The Marketing of New Ideas (6)
The rapid pace of technological change, coupled with the globalization of business, has increased the competitive pressure on organizations to more quickly evolve their product and service offerings. Stable product design and long production runs are no longer the norm. Because product life cycles are now often measured in months rather than years, companies want to customize their products to sustain customer loyalty. This course discusses business development strategies from the perspective of the customer and investigates sources of new capital, which can be tapped to finance development efforts. Formulating effective marketing programs that address the continuous flow of new products is equally important. In particular, electronic commerce is becoming an increasingly popular distribution channel and is an integral part of the seminar. Finally, this course approaches the process of new product development from the perspective of how information is created and managed in organizations. Topic areas include innovation, entrepreneurship, knowledge management, product development, marketing management, and electronic commerce.
AMBA 604 Technology and Operations Management (6)
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. Topics include information systems, quality control, forecasting, operations management, and project management.

AMBA 605 The Economics of Management Decisions (6)
The economic environment of an organization defines the threats to its survival and the opportunities for its future success. This seminar applies the concept of economic decision making to a wide range of management decisions. 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 seminar provides insight into these issues. Important valuation themes discussed in this seminar 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 in this area of performance measurement are discussed: economic value added, the balanced scorecard, and open-book management. Cost management remains an essential topic within every organization; in this regard, activity-based costing is discussed. However, there is a growing concern that too much attention to cost overlooks the key objective of every organization, which is to increase the value it provides to the customer. Therefore, an organization’s performance is analyzed from the perspective of the theory of constraints. This seminar is divided into four modules: historical perspective on managerial decision making, valuation issues, performance measurement issues, and cost management issues.

AMBA 606 Organizations and the External Environment (6)
This seminar 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 will be key focus points in this seminar. 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 seminar’s critical features. Increased student knowledge of and comfort with the nature of external business environments is a seminar goal. Topics include business and antitrust law, corporate governance, regulatory environments, international trade, macroeconomic policy, and technology innovation.

AMBA 607 Strategic Management (6)
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. The seminar addresses the challenges of formulating and implementing strategy in both single-business and multibusiness 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 competitive environment and internal resources and capabilities. Topics include different perspectives on strategy, analytical models and frameworks in strategy formulation, building and sustaining competitive advantage, growth and international strategies, strategy implementation, and strategy in the new economy or corporate governance.

AMBA 607A Strategic Management (3)
This course covers the content in the first seven weeks of AMBA 607. Students who have received approval to transfer 3 credits of graduate business coursework from an accredited university are eligible to take AMBA 607A.
BIOT 610 Introduction to Bioinformatics (3)
(Formerly BIOT and BTMN 646.) 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 data bases of biological information, computationally intensive methods, new algorithms, and machine learning unite to extract new concepts. This is the domain of bioinformatics. Specifically, 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 of which are the analysis of macromolecular sequences, the analysis of tridimensional structures, the analysis of phylogenetic relationships, and the analysis of genomic and proteomic data.

BIOT 613 Statistical Processes for Biotechnology (3)
Prerequisite: Knowledge of basic statistics. This class focuses on Bayesian statistics, Markov processes, and information theoretic indices. These statistical tools can be used to analyze inheritance patterns (dominance, recession, sex linkages, etc.), sequence homology, and the presence of motifs in sequences. A number of concepts (including information content, mutual information, long-range correlation, repeats, and Fourier analysis) will be introduced. Linguistic methods will be evaluated.

BIOT 615 Relational Database Systems (3)
(Also listed as CSMN 661.) 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.

BIOT 616 Data Structures and Algorithms (3)
(Also listed as CSMN 614.) This course introduces the definitions, implementations, and applications of the most 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.

BIOT 617 Advanced Bioinformatics (3)
Students are given the basic programming tools for performing bioinformatic 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.

BIOT 640 Societal Issues in Biotechnology (3)
(Formerly BTMN 640.) 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 Commercializing Biotechnology in Early-Stage Ventures (3)
(Formerly BTMN 641.) This course focuses on methods for planning and organizing biotechnology ventures. The elements of a business plan are considered, as are methods for assessing various needs, such as capital, personnel, technology, and marketing. Approaches to marketing technology and developing joint ventures are emphasized. Advantages and disadvantages of forming international ventures are weighed. The importance of maintaining relations with external constituents is discussed, as is the need for managing public awareness.
BIOT 642 The Selection and Evaluation of Biotechnology Projects (3)
(Formerly BTMN 642.) 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.

BIOT 643 The Techniques of Biotechnology (3)
(Formerly BTMN 643.) This course offers a comprehensive review of the technologies in use today in biotechnology research and applications. Modern techniques used in genetic engineering, sequencing, cloning, etc. are discussed. The development and use of these techniques are placed in a historical context.

BIOT 644 The Regulatory Environment of Biotechnology (3)
(Formerly BTMN 644.) This course provides a comprehensive review of the role of regulation in biotechnology products and services development and commercialization. The roles of the federal government, state government agencies, international bodies, and professional groups are emphasized. Specifically, the regulatory roles of the U.S. Environmental Protection Agency, the U.S. Department of Agriculture, and the Food and Drug Administration are emphasized. Human subject protection, good laboratory practices, and good manufacturing practices are discussed.

BIOT 645 The Business of Biotechnology (3)
(Formerly BTMN 645.) This course introduces students to the range of businesses associated with biotechnology. These businesses include medical procedures, self-testing procedures, pharmaceuticals, reagents, agricultural, environmental bio-remediation, 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 671 Capstone (3)
(Formerly BTMN 671.) Prerequisite: Completion of 27 credits, including 21 credits of core courses. During the biotechnology studies program capstone course, students conduct in-depth analyses of cross-cutting business and technical issues such as bioterrorism, bioethics, nanotechnology, entrepreneurship, sources of capital, and marketing. The course addresses trends in biotechnology, the elements of ethical management, and the sociological aspects of biotechnology. Students integrate prior core content areas through case analysis and the development of a start-up design for a new biotechnology venture.

CSMN 601 Issues, Trends, and Strategies for Computer Systems Management (3)
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.

CSMN 614 Data Structures and Algorithms (3)
This course introduces the definitions, implementations, and applications of the most 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 615 Hardware and Operating Systems (3)
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 Distributed Computing (3)

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.

CSMN 617 Principles of Programming Languages (3)

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.

CSMN 618 Knowledge-Based Systems (3)

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. This 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.

CSMN 635 Systems Development and Project Control (3)

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 Telecommunications and Connectivity (3)

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 639 Multimedia and the Internet (3)

(Cannot be completed using UMUC computer laboratory facilities; requires a current multimedia PC with ample hard disk capacity and Internet connectivity.) Prerequisite: CSMN 601 or TLMN 602; CSMN 636, TLMN 610, or TLMN 620 recommended. 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 information theory, 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.

CSMN 655 Information Risk Assessment and Security Management (3)

The proliferation of corporate databases and the development of telecommunication network technology are examined as gateways or invitations to intrusion. 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 in the course. Examples of how major technological advances in computer and operating systems have placed data, as tangible corporate assets, at risk are presented. Quantitative sampling techniques for risk assessment and for qualitative decision making under uncertainty are explored.
CSMN 658 Software Reliability and Reusability (3)
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.

CSMN 661 Relational Database Systems (3)
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.

CSMN 662 Advanced Relational/Object-Relational Database Systems (3)
Prerequisite: CSMN 661 or equivalent. Building on the foundation established in CSMN 661, students explore advanced concepts 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.

CSMN 663 Distributed Database Management Systems (3)
Knowledge and awareness of current trends and emerging technologies in distributed database management is quintessential to 21st-century database management. This course builds on the fundamentals of database systems that manage distributed data. The development of distributed database management is introduced by focusing on concepts and technical issues. A survey of various topics in distributed database management systems includes architecture, distributed database design, query processing and optimization, distributed transaction management and concurrency control, distributed and heterogeneous object management systems, and database inoperability.

CSMN 664 Object-Oriented Database Systems (3)
Prerequisite: CSMN 661 or equivalent. 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.

CSMN 665 Data Warehouse Technologies (3)
Prerequisite: CSMN 661 or equivalent. 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. The course will include an online laboratory component.

CSMN 666 Database Systems Administration (3)
Prerequisite: CSMN 661 or equivalent. 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.

CSMN 667 Data Mining (3)
Prerequisite: CSMN 661 or equivalent. As the amount of data has grown, so has the difficulty in analyzing it. Data mining is the search for hidden, meaningful patterns in large databases. Identifying these patterns and rules can provide significant competitive advantage to businesses. This course focuses on the data mining component of the knowledge discovery process. Students will be introduced to some data mining applications and identify algorithms and techniques useful for solving different problems. Many of the techniques will include the application of well-known statistical, machine learning, and database algorithms including decision trees, similarity measures, regression, Bayes's theorem, nearest neighbor, neural networks, and genetic algorithms. Students will also research a data mining application and learn how to integrate data mining with data warehouses.
CSMN 668 Database Security (3)
Prerequisite: CSMN 661 or equivalent. Information stored in databases is a valuable asset that needs to be protected from damage. This course offers both theory of and applications for providing effective security in database management systems. Conceptual frameworks for discretionary and mandatory access control, data integrity, availability and performance, secure database design, data aggregation, data inference, secure concurrency control, and secure transactions processing are studied. Models for multilevel secure databases for both relational and object-relational databases are analyzed. Practical applications of database security concepts are applied in the laboratory component of this course.

CSMN 683 Intrusion Detection, Incident Response, and Computer Forensics (3)
Prerequisite: TLMN 672. 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 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.

CSMN 685 Security Policy, Ethics, and the Legal Environment (3)
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—including suitable organizational policy, plans, and implementation strategies—are covered. Ethical issues such as monitoring employee computer use and proper limitations on the use of customer data are also discussed.

CSMN 690 Computer Systems Management Project (3)
Prerequisite: CSMN 660. 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.

CSMN 762D Advanced Relational/Object-Relational Database Systems (3)
Prerequisite: CSMN 661 or equivalent. 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.
DMGT 701 The Philosophy and Methods of Scholarly Inquiry (9)

This seminar provides students with a foundation in science, theory, and research to apply critical thinking skills in the identification, understanding, and resolution of business and management issues. The seminar has three goals: to provide a foundation in the history of ideas and the formation of knowledge; to enable participants to critically evaluate the ideas of others and also to develop, defend, and test their own ideas; and to give participants the opportunity to employ relevant theories, concepts, and ideas in concrete organizational and management situations.

DMGT 702 Technological Innovation for Global Leadership (9)

Prerequisite: Completion of all program breadth requirements and all other coursework leading up to the dissertation/doctoral project except for 3 semester hours. This seminar builds on the knowledge, skills, and insights developed in the DMGT 701 seminar and the content covered by the program breadth requirements. The emphasis is on depth, integration, and application in such important areas as technological innovation management, leadership development and decision making, and strategic aspects, including comparative economics, and international trade and commerce. There are three integrated modules in this seminar: (1) leadership in the 21st century; (2) technology and socioeconomic systems design; and (3) strategic innovation management for international competitiveness.

DMGT 711 Quantitative Research Methods (3)

This class serves as the foundation for doctoral students preparing for quantitative research; the materials covered in this course will be an assessment of statistical and quantitative management research techniques. The major goal of the quantitative research course is to ensure students have the tools they need to conduct research needed for their doctoral dissertations and for the workplace. Students completing this class should also be able to perform doctoral-level quantitative assessments and evaluations of management and organizational functions.

DMGT 712 Qualitative Research Methods (3)

Qualitative research concerns the meaning of social action, rather than the prediction or control of events, and the cultural and sociological context within which action occurs. In this course, qualitative methodologies for analyzing organizational settings relevant for program development, managerial decision making, technology adoption, marketing, and policy are presented with reference to ethnography and ethnography. Techniques for the design and implementation of qualitative methods are assessed. Special attention is paid to the analysis, translation, and interpretation of qualitative data. Students are introduced to various qualitative techniques that include focus groups, content analysis, and directed conversations.

DMGT 783 Advanced Topics in Technology and Information Systems (3)

This seminar, intended primarily for students whose specialty area is information technology (IT), examines advanced topics in information technology (IT). Topics covered include business IT integration, using IT as a competitive advantage, return on investment, and outsourcing. Also studied are the IT system requirements for scalability, reliability, and security. The seminar emphasizes emerging IT technologies including data warehousing, data mining, artificial intelligence, wireless infrastructures, and future uses of Internet technology.

DMGT 785 Futures and Change Management (3)

This interactive seminar discusses how to affect organizational change in light of major trends. Class members will learn how to employ tools designed by futurists in order to assess the potential impact of trends on their organizations and develop a plan of action. Focusing on an industry or organization of his or her choice, each student will conduct in-depth research on the trends affecting that organization or industry and prepare a publishable paper describing those trends.

DMGT 790 Special Topics (3)

This course is the “wild card” of independent studies offered at the doctoral level in a new but relevant area of knowledge that is helpful for the dissertation research. This course can also be used to learn something deeply through teaching (under the guidance of graduate faculty) or expanding and designing special modules of an existing course.
DMGT 795 Independent Studies in Selected Knowledge Area (3)
This independent study is an individual study under the guidance of a faculty member for an agreed-upon “knowledge search work and scholarly documentation.” This requires a thorough investigation of one or a number of interrelated topics, concepts, and methodologies that are most likely to contribute significantly in the formulation of the student’s doctoral dissertation research framework.

DMGT 797 Independent Studies in Selected Problem Area (3)
This independent study is an individual study under the guidance of a faculty member for an agreed-upon “problem search work and scholarly documentation.” This requires a thorough investigation of a problem area of mutual interest.

ECOM 610 Introduction to E-Commerce (3)
The rapid growth of e-commerce 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 e-commerce initiative. Topics covered include definitions of e-commerce; a brief history of e-commerce; e-commerce business models; the role of technology; economics of information goods; virtual value chain; electronic markets; impact of e-commerce on organizational strategy and industry structure; in-depth assessment of successful e-commerce strategies; legal, social, ethical, regulatory, and other emerging issues related to e-commerce; and electronic communities and virtual organizations. The course also presents an outline of the technologies that enable e-commerce, 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 e-commerce servers.

ECOM 620 E-Marketing (3)
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.

ECOM 630 Information Risk Assessment and Security Management (3)
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 Internet Principles and Applications (3)
This course examines both the technological bases and applications of the Internet. The first part of the course studies Internet technology including packet networking, TCP/IP, Internet security and authentication (e.g., firewalls, encryption, virtual private networks), Internet 2, and IPv6. The second part of the course reviews Internet applications and their evolving use for multimedia transmission (such as voice over the Internet), private and leased service IP networks, e-commerce, data warehousing, and data mining. Finally, policy issues such as universal service and access are examined.

ECOM 650 E-Commerce Applications and Operations (3)
This course provides an understanding of e-commerce applications and operations. The course covers technical topics such as the Internet, intranets, 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), e-procurement, outsourcing, 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, just joint ventures, and other methods to achieve strategic advantages and sustained operations.
ECOM 660 E-Commerce Financial Management and Accounting (3)
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 e-commerce investment opportunities in a strategic context. Additional topics covered include financial management processes and activities significantly affected by the implementation of e-commerce 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 Social, Legal, Ethical, and Regulatory Issues (3)
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 include 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 e-commerce applications is developed.

ECOM 680 E-Commerce Application Software (3)
This course examines application software for business-to-business and business-to-consumer e-commerce. Initially studied are several fundamental e-commerce application software tools including programming languages (e.g., Java, Perl/cgi-bin), search engines and Web authoring tools (e.g., HTML, HTTP, and XML). Also studied are transaction processing software tools including intelligent agents. Specific business-to-business transaction exchange methods reviewed include Electronic Data Interchange (EDI) and Electronic Funds Transfer (EFT).

ECOM 681 Introduction to Electronic Government (3)
In 2001, nearly one in ten Americans visited a state, county, or city government Web site for the first time. E-government has become an important part of how many Americans interact with government—most Internet users (76 percent) and more than half (51 percent) of all Americans have now visited a government Web site. This course examines the policy framework that enables an electronic government in the United States at the federal, state, and local levels of government. Government-to-citizen, government-to-business, and government-to-government processes to provide information and services through electronic media are analyzed and evaluated within both the policy framework and the context of current U.S. government issues and activities. Critical concerns such as privacy, security, e-democracy, and access in an electronic environment are addressed throughout the course.

ECOM 690 E-Commerce Capstone (3)
Prerequisite: Completion of at least 27 of the required 36 credits. 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 cross-cutting issues such as learning organizations, the changing nature of work, entrepreneurship and intrapreneurship, technology trends, communication, creativity, and innovation.

ECOM 760D E-Commerce Financial Management and Accounting (3)
This course focuses on the evaluation of e-commerce/information technology investments being considered by an organization. The time value of money, discounting techniques, and option pricing principles are applied to e-commerce investment opportunities in a strategic context. Additional topics covered include financial management processes and activities significantly affected by the implementation of e-commerce 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.
ENER 601 Energy Resources (3)
An understanding of the various traditional sources of energy, their availability, quality, environmental impacts, and potential alternatives is critical for managers involved in the energy business. This course provides a perspective of both traditional and nontraditional sources of energy. Traditional sources such as oil, gas, and coal are non-renewable and are currently used in meeting energy needs throughout the world. Nontraditional sources of energy such as bio-mass, solar, wind, and hydro are considered renewable and are likely to play an important role in fulfilling future energy demands. The course critically examines the resources, energy demand, and principles of conventional thermal energy conversion. The course also analyzes society’s dependence on energy, particularly fossil fuels, and the availability of alternative electricity-producing technologies. The evolution of new technologies, including their programmatic, development, and deployment stages is also examined.

ENER 602 Energy Economics (3)
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 Energy Infrastructure Management (3)
This course offers an overview of U.S. and world energy infrastructure from the wellhead to the consumer. It covers drilling, refining, transportation, and power generation and how the various energy grids fit together in a vast network of energy delivery services. The course identifies vulnerabilities in the system of energy delivery and methods to reduce these vulnerabilities. It also discusses energy infrastructure issues in developing countries and the means to leapfrog over existing technologies in order to develop an energy infrastructure. Energy infrastructure risk and security issues are discussed, and measures to safeguard these infrastructures and minimize risk are introduced.

ENER 646 Environmental/Energy Law and Policy Development (3)
(Also listed as ENVM 646.) 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 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 641 Environmental Auditing (3)
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 Environmental Communications and Reporting (3)
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; these include 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 644 New Technologies in Environmental Management (3)
An overview is offered of new waste management and waste minimization technologies, including treatment technologies such as physical and chemical treatment of hazardous wastes, bioreactors and bioremediation, and reverse osmosis and ultrafiltration. Disposal technologies such as landfill design and operation, incineration, and encapsulation methods are reviewed. Pollution prevention technologies, including process redesign and computer-aided process control, as well as the substitution of toxic materials, are also presented.

ENVM 645 Hazardous Materials Transportation (3)
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 646 Environmental/Energy Law and Policy Development (3)
(Also listed as ENER 646.) 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 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 Environmental Risk Assessment (3)
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 648 Fundamentals of Environmental Systems (3)
(For students lacking a strong science background or experience in the environmental field.) 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.

ENVM 649 Principles of Waste Management and Pollution Control (3)
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 Land and Water Resource Management (3)
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 distributitional equity issues are examined. The Public Trust Doctrine, Native American Trust responsibilities, and land use regulations are also examined. Enforcement of 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 Watershed Planning Management (3)
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 Principles of Air Quality Management (3)
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 Air Pollution Sources and Controls (3)
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.

ENVM 670 Seminar in Environmental Management (3)
The capstone course for the environmental management program requires 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 focuses on management guidelines, including ISO 14001, that provide an organizational framework for developing an environmental management system that can be integrated with other management requirements to help organizations support environmental protection in balance with socioeconomic goals. Case studies are used to illustrate applications of environmental management systems to various types of organizations. For the capstone project, students are required to assess the efficiency and effectiveness of an environmental management system at an organization and develop recommendations for improvement.

ENVM 690 Environmental Management Project (3)
Prerequisite: Completion of 30 credits of graduate coursework and ENVM 670. 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. Students have two semesters to complete the management project.

HCAD 600 Introduction to Health Care Administration (3)
(Must be completed in the first 9 credits of the MS in health care administration program.) This course introduces students to the principles of management and leadership as the foundations for the administration of health care products and service delivery. Tracing the evolution of management principles and practices, students analyze the bases 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 are emphasized. Course outcomes also focus upon increasing students’ abilities to master graduate-level critical thinking and writing skills, as well as enhancing their ethical responses to the many ethical challenges in the health care industry.

HCAD 610 Information Technology for Health Care Administration (3)
(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 The U.S. Health Care System (3)
(Formerly ADMN 670.) A comprehensive examination of the complex, dynamic, rapidly changing health care system in the United States is presented. The health care system’s major components and their characteristics are identified, with an emphasis on current problems in health care financing and delivery. Social, economic, and political forces that have shaped and continue to influence the system are traced. The health care system in the United States is compared with systems in industrialized and developing nations. An analysis of current trends in health care and prospects for the future is included.

HCAD 630 Public Health Administration (3)
(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 U.S. 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 640 Financial Management for Health Care Organizations (3)
(Formerly ADMN 672.) Prerequisites: ADMN 630 or 631. 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.

HCAD 650 Legal Aspects of Health Care Administration (3)
(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 are discussed, with an emphasis on contracts and torts. 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. Various pressing bioethical issues facing health care practitioners and administrators are examined.

HCAD 660 Health Care Institutional Organization and Management (3)
(Formerly ADMN 674.) Prerequisites: ADMN 625 and 635. The internal organization and management of health care institutions are examined. The diverse topics covered include health care management, organizational theory and design, managerial roles, performance measures, and controls. In addition, issues relating to strategic planning and organizational adaptation to changing environmental conditions are studied. Through the case study approach, students have the opportunity to utilize problem resolution and decision-making skills in solving typical problems facing managers in health care organizations.

HCAD 670 Long-Term Care Administration (3)
(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 Special Topics in Health Care Administration (3)
(Formerly ADMN 679.) Prerequisites: HCAD 650 and either ADMN 630 or ADMN 631. 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 faculty member.

HCAD 690 Capstone Course for Health Care Administration (3)
Prerequisite: Completion of 30 credits. This 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 the future of health care, strategic decision making in the health care industry, and alliances with internal and external environments. From a global perspective, students will employ health care industry cases, exercises, and business plans to demonstrate their competencies for health care administration now and in the future.

IMAN 601 Strategic Management in a Global Environment (3)
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.

IMAN 605 Intercultural Communication and Leadership (3)
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 Economics in a Global Context (3)
Prerequisite: Knowledge of materials covered in UCSP 621, including inflation, unemployment, recession, supply and demand, opportunity costs, comparative advantage, economic efficiency, and the time value of money. 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 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 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 will be examined.

IMAN 615 Foreign Investment and Strategic Alliances (3)
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 620 International Marketing Research and Analysis (3)
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.

IMAN 625 International Trade and Trade Policy (3)
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 630 International Financial Management (3)
Recommended: ADMN 630 or ADMN 631. The theory and management of financial systems in international enterprises, 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, are examined. 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.

IMAN 635 Managing Country Risk (3)
Major issues of national competitiveness, including the measurement of competitiveness and the role of the public sector in shaping competitiveness, are covered. This course also examines various domestic issues that affect the global competitiveness of businesses, such as antitrust, intellectual property protection, health and environmental policies, and nationalistic policies. The strategic conduct of government relations at the national, regional, and international levels is considered.

IMAN 640 International Marketing Management (3)
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 The International Legal and Tax Environment (3)
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.

IMAN 650 Managing Overseas Operations (3)
Prerequisite: Completion of all core and track courses. This is the capstone course in international management. A wide range of management problems facing both large and midsized 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.

IMAN 661 Area Studies: Business Strategies for Europe (3)
(Course activities require participation in a 10-day study trip abroad.) Prerequisite: Knowledge of marketing or permission of program director; completion of all core and track courses recommended. 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.
IMAN 690 International Management Project (3)
Prerequisite: Completion of all required and elective courses, including IMAN 650. 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.

ITSM 637 IT Acquisitions Management (3)
This course defines management practices for the acquisition of IT systems and information resources. Strong emphasis is placed on the importance of enterprise strategic planning and the concomitant IT strategic planning. Issues related to the development of the IT acquisition plan, financial planning and budgeting, integration of the proposed acquisition within the overall goals of the enterprise, and related IT program management are examined in the context of overarching management challenges. Related issues include federal and commercial IT systems contract and procurement policies and procedures. Students will use Microsoft project management software.

ITSM 670 Information Technology Integration and Applications (3)
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 re-engineering, 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.

MSIT 610 Foundations of Information Technology (3)
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 it is possible, these concepts will be treated descriptively rather than analytically.

MSIT 620 Computer Concepts (3)
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 Concepts in Software-Intensive Systems (3)
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 Data Communications and Networks (3)
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 Systems Engineering (3)
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 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. Case studies from the information technology domain will be used to illustrate the systems engineering principles.

MSIT 660 Internet Technologies (3)
(Also offered as TLMN 636.) This course studies the Internet, addressing both its technological basis and its applications. The first part of the course studies Internet technology including packet networking, Transmission Control Protocol/Internet Protocol (TCP/IP), Internet security and authentication (for example, firewalls, encryption, and virtual private networks), Internet 2, and IPv6. The second part of the course reviews Internet applications and their evolving use for multimedia transmission (such as voice over the Internet), private and leased service IP networks, e-commerce, data warehousing, data mining, and policy issues such as universal service and access.

MSWE 601 Issues in Software Engineering (3)
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 Systems Engineering (3)
Prerequisite: MSWE 601 or permission of faculty member. 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.

MSWE 617 Software Engineering Project (3)
Prerequisite: Either completion of all core courses and at least two electives or permission of faculty member. 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 faculty member will emulate the vagueness shown by typical customers in describing requirements. The faculty member 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).
MSWE 635 Software Systems Development (3)
Prerequisite: MSWE 603 and either TMAN 640 or MSWE 640; permission of program director is required if the prerequisites cannot be met. 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.

MSWE 640 Software Project Management (3)
This course explores the current theory and practice of software development project management. Fundamental elements include integration, scope, time, cost, quality, human resources, communications, risk, and procurement management as defined in the Institute of Electrical and Electronics Engineers (IEEE) standard for project management, which is an adoption of the Project Management Institute Guide to the Project Management Body of Knowledge. The relationship between each knowledge area and the detailed processes required to manage software projects is explored. Various approaches to software project planning, software project estimating, networks and scheduling, tracking and control, and technical and support processes are analyzed. Students apply the principles covered in this course by developing a software project management plan for a complex system.

MSWE 645 System and Software Standards and Requirements (3)
Prerequisite: Either MSWE 601, CSMN 601, or permission of faculty member. 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.

MSWE 646 Software Design and Implementation (3)
Prerequisite: Either MSWE 601, CSMN 601, or permission of faculty member. 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.

MSWE 647 Software Verification and Validation (3)
Prerequisite: Either MSWE 601, CSMN 601, or permission of faculty member. 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.

MSWE 648 Software Maintenance (3)
Prerequisite: Either MSWE 601, CSMN 601, or permission of faculty member. 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.
MSWE 697 Independent Research (3)
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.

MSWE 698 Advanced Topics in Systems and Software Engineering (3)
Prerequisite: MSWE 601 or CSMN 601. 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.

MSWE 699 Advanced Topics in Software Engineering (3)
Prerequisites: MSWE 601 and permission of faculty member. 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 repeated up to a maximum of 6 credits.

OBOD 685 Futures and Change Management (3)
This interactive seminar discusses how to affect organizational change in light of major trends. Class members will learn how to employ tools designed by futurists in order to assess the potential impact of trends on their organizations and develop a plan of action. Focusing on an industry or organization of his or her choice, each student will conduct in-depth research on the trends affecting that organization or industry.

OMAT 601 The Contemporary School (3)
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 the 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.

OMAT 602 Adolescent Development (3)
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 Curriculum, Instruction, and Assessment (6)
Prerequisite: OMAT 601. 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 spend approximately five weeks in a professional development school participating in guided observations and other school-based experiences. These practicum experiences are timed so they coincide with critical incidents in a typical school year.

OMAT 604 Subject Area Methods (3)
Prerequisite: OMAT 603. 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.

OMAT 605 The Diverse Learner (3)
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.
OMAT 606 Internship with Seminar (9)
Prerequisite: Completion of all other MAT coursework. Teachers apply concepts, techniques, methods, and theories learned in prior courses and field experiences. The teacher candidate spends a full semester in a professional development 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 be able to participate in additional school-based activities.

OMAT 607 Secondary Reading I (3)
Essential dimensions of secondary reading instruction, including motivation for reading, cognitive strategies, and remediation, are explored. Other topics include appropriate reading materials, technology for reading instruction, assessment of content literacy, and relationships between vocabulary and concept development.

OMAT 608 Secondary Reading II (3)
Prerequisite: OMAT 607. A coherent literacy program that supports reading and writing across subject areas is developed. Methods and strategies for evaluating and adapting reading curriculum for varying student needs are addressed. Teachers develop lesson plans that integrate appropriate reading materials to achieve specific subject-matter goals.

OMAT 609 Technology in Teaching and Learning (3)
(Also listed as OMED 600.) This course builds on the traditional concepts found in foundations of education courses, but incorporates how technology affects 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.

OMDE 601 Foundations of Distance Education (3)
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 Borje Holmberg (Sweden) and Otto Peters (Germany).

OMDE 602 Distance Education Systems (3)
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 Technology in Distance Education (3)
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 The Management of Distance Education 2: Leadership in Distance Education (3)
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, inter-institutional 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 The Management of Distance Education 1: Cost Analysis (3)
The course places the economics of distance education in the larger context of the economics of education. Various methodological approaches (including cost/benefit and cost/effectiveness analysis) are applied to the distance education context. Various 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 Helsmann (Germany).

OMDE 607 Instructional Design and Course Development in Distance Education (3)
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 Student Support in Distance Education and Training (3)
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 (United Kingdom).

OMDE 611 Distance Education Library Services (3)
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 ways 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 614 Intellectual Property and Copyright in Distance Education (3)
This course will provide an overview of intellectual property issues, with an emphasis on the U.S. Copyright Law and the application of federal copyright principles to the distance education environment. The advent of the Internet and 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, like 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 621 Training at a Distance (3)
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, in-sourcing 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 The Business of Distance Education (3)
Distance education/training is emerging within a highly competitive environment. Not only does the manager need to know about cost effectiveness issues, but also must often be responsible for such tasks as marketing (local, national, and increasingly worldwide), choosing between in-sourcing and outsourcing, balancing the strong entrepreneurial focus of distance education within more traditional service-based organizations, and deciding 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 Web-Based Learning and Teaching and the Virtual University (3)
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 National and International Policies for Distance Education in Developing Countries (3)
This course is an exercise in stocktaking, asking the question “For which purposes has distance education been used in developing countries?” and examining the evidence on the extent to which it has worked. The overall objective of this course is to equip the learner with a knowledge of open and distance learning in the developing world and enable him or her to use conceptual models to make informed choices among options as a manager, policy maker, practitioner, or advisor. It will analyze the roles played by international agencies including bilateral and multilateral funding agencies, the UN family, regional bodies, and the specialist agencies. 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 Technologies for Distance Education in Developing Countries (3)
Distance education is a global affair. Most countries have national distance education efforts. Usually these distance education systems reflect the internal educational and cultural structure of the country, but increasingly these systems need to interact with the distance education systems of other countries and cultures. This course considers the similarities and differences in a wide variety of distance education systems, institutions, and curricula across a variety of countries and cultures. European, Asian, Latin American, and North American models of distance education are explored. Students investigate the effect of political and cultural climate on national distance education policies. The course emphasizes the role of international organizations in promoting collaborative and cooperative projects and activities, and a number of examples of cross-national projects are examined in depth.

OMDE 631 Advanced Technology in Distance Education 1—Synchronous Learning Systems (3)
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, microwave broadcasting, public TV broadcasting, audio conferencing, site-based video conferencing, desktop video conferencing, application sharing, chat tools, MOOs, MUDs, and Web-based technologies such as push, pull, real-time streaming audio and video, and large-scale real-time Web broadcasting. Some technical details regarding standards-based technologies, telecommunications technologies, and computer technologies are examined so that students will be able to effectively manage the technical implementation of these tools.

OMDE 632 Advanced Technology in Distance Education 2—Asynchronous Learning Systems (3)
This is an advanced course that builds upon OMDE 603 Technology in Distance Education. The course focuses specifically on asynchronous (non-real-time) technologies such as computer-mediated communication (computer conferencing), e-mail, list-servers, archived streaming audio and video, and so forth. Some technical details are covered relating to telecommunication technologies, video technologies, and computer technologies to ensure that the students can effectively manage the technical implementation of these tools.
OMDE 690 Distance Education Portfolio and Project (3)
This required capstone course covers two significant tasks for students: (1) creating a personal distance education portfolio that will serve as an ongoing professional resource, as well as a useful job search tool, and (2) developing and documenting 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.

OMED 600 Foundations of Technology in Teaching and Learning (3)
(Also listed as OMAT 609.) This course builds on the traditional concepts found in foundations of education courses, but incorporates how technology affects 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 Digital Information Literacy for K–12 Educators (3)
Prerequisite or corequisite: OMED 600. Expertise is developed in the use and evaluation of a wide array of electronic information resources, including ERIC, LexisNexis, 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 Web-Based Learning and Teaching: Design and Pedagogy (3)
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 Technology in K–12 Education: Synchronous, Asynchronous, and Multimedia Technologies (3)
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 list servers.

OMED 640 Using Technology for Instructional Improvement (3)
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 Hardware and Software in Instructional Development (3)
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 Administration of Technology Initiatives: Planning, Budgeting, and Evaluation (3)
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 Technology Change Management in Schools (3)
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.

OMED 680 Integrative Capstone Project (3)
(To be completed at the end of the program in consultation with the MEd program director.) 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.

OMED 690 Special Topics in Instructional Technology (3)
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.

PMAN 634 Program and Project Management (3)
(Also listed as TMAN 640.) This course explores the theory and practice of how to manage projects. The fundamental elements of project management, including project planning, organizing, team building, and effective control mechanisms, are stressed. 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.
PMAN 635 Techniques of Scheduling and Resource Allocation (3)

The focus of this course is to use the tools and techniques of project planning, scheduling, and allocating resources. Students design work breakdown structures, identify work packages, allocate resources, and develop project schedules using standard networking techniques. Students master techniques for estimating, forecasting, budgeting, monitoring, controlling, and reporting project costs. The Monte Carlo Simulation technique is applied to estimate budgets, schedule, and allocate resources. Students apply modern project management concepts and tools to "real-world" projects through the use of carefully selected case studies. Project management software is used for scheduling and allocating time-critical resources to achieve optimized performance in the project management environment.

PMAN 636 Legal Aspects of Contracting (3)

(Also listed as ADMN 627.) 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.

PMAN 637 Risk Management: Tools and Techniques (3)

Risk management is the systematic process of identifying, analyzing, evaluating, and controlling project risks. An in-depth analysis of risk management methodologies, from both the strategic and tactical aspects is performed. State-of-the art tools and techniques for identifying, measuring, and monitoring risks in the project management environment are examined. Both qualitative and quantitative risk analyses are conducted, and strategies for proactive risk aversion and reactive risk response are developed. Students learn how a comprehensive risk management approach can enable a project team to proactively manage issues that adversely impact the successful control and completion of a project.

PMAN 638 Communication, Negotiation, and Conflict Resolution (3)

Managing the human elements of project management is as challenging as mastering the technical aspects. Innovative approaches are employed to successfully negotiate and resolve conflicts among the team members and stakeholders. In today’s global corporate environment, project workers are faced with critical global issues both at home and abroad. In this course, students develop an understanding of the international aspects of project management and gain the skills to deal effectively with the key issues of labor, environment, stakeholders, global project workforce, and relevant country disputes. Proven techniques to make conflict a constructive rather than a destructive experience are discovered. Students develop effective communication, negotiation, and conflict resolution skills to successfully lead both domestic and global projects.

PRPA 601 Public Relations Theory and Practice (3)

(Must be taken within the first 6 credits for students in the public relations track of the MS in management.) This course relates the management function of policy formulation to the communication process of disseminating ideas and information to the organization's public. The process of planning and executing public information and public relations programs to address the concerns of the organization's various publics are examined. Topics addressed include message formation, media selection, and audience differentiation. The impact of the Internet on public relations practices will be explored in depth.

PRPA 602 Media Communications Techniques (3)

This course presents advanced writing techniques designed to coach students in the writing of specialized public relations materials, with emphasis on audience, message, and channel identification. The latter portion of the course examines special communication techniques necessary for broadcast and electronic media.

PRPA 603 Public Relations Research (3)

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 Public Relations Law and Ethics (3)
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 Crisis Management Seminar (3)
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.

TLMN 602 Telecommunications Industry: Structure and Environment (3)
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.

TLMN 610 Data Communications Systems (3)
Prerequisites: Statistics and Calculus I, or equivalent. 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 include 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. Methods for determining system requirements as well as approaches to system design are covered in light of current data communications equipment, applications, and services and their future trends.

TLMN 620 Local Area Networking Systems (3)
Prerequisites: Statistics and Calculus I, or equivalent. 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 LAN 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. Each session includes evaluation methodologies relevant to strategic and economic planning.

TLMN 625 Wide Area Networking Systems (3)
Prerequisites: Statistics and Calculus I, or equivalent. 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). 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).

TLMN 630 Satellite Communication Systems (3)
Prerequisites: Statistics and Calculus I, or equivalent. 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.
TLMN 636 Internet Technologies (3)
(Also offered as MSIT 660.) This course examines both the technological base and applications of the Internet. The first part of the course studies Internet technology, including packet networking, Transmission Control Protocol/Internet Protocol (TCP/IP), Internet security and authentication (for example, firewalls, encryption, virtual private networks), Internet 2 (a new research-oriented Internet), and IPv6 (advanced Internet protocol). The second part of the course addresses Internet applications and their evolving use for multimedia transmission (such as voice over the Internet), private and leased service IP networks, e-commerce, data warehousing, and data mining. Finally, policy issues such as universal service and access are examined.

TLMN 645 Wireless Telecommunications Systems (3)
Prerequisites: Statistics and Calculus I, or equivalent. 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), wireless fidelity (Wi-Fi), 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.

TLMN 641 Network Management and Design (3)
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.

TLMN 650 Hardware and Software Acquisition (3)
The process involved in acquisition of telecommunication systems is analyzed. Topics include, but are not limited to, consideration of the approaches to determining end-user requirements, definitions of the system, statement of design requirements, development of a request for proposal (RFP), evaluation of possible vendors, evaluation of proposed equipment and services (for example, maintenance and other support), contract negotiations, and eventual system acquisition. Also discussed are project management concepts used to manage the procurement process.

TLMN 655 Systems Integration for Telecommunications Managers (3)
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 telecommunications 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.
**TLMN 660 Telecommunication Management Issues (3)**
Prerequisite: Completion of 27 credits of graduate coursework. This course is the capstone course of the program. It integrates the material presented in all other courses, covering techniques for the management of telecommunication systems, including diverse technologies, hardware and software facilities, technological change, strategic planning, financial analysis, and the types of organizational structures suited to various user needs. The different roles of organizational entities such as research and development, production, marketing, human resources, and operations are considered. Students analyze and report on current and future problems and issues related to the telecommunications industry as a whole and to the management of telecommunications within the enterprise. Students assess the impact of technological changes in telecommunication services and applications on effective organizational cultures and on potential social change.

**TLMN 672 Network and Internet Security (3)**
Prerequisite: Either CSMN 636, CSMN 655, or any TLMN technological specialization course. 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 Internet communications protocols. Specific security subjects addressed include firewalls, packet filtering, virtual private networks (VPNs), wireless network security, and operating system security.

**TLMN 690 Telecommunications Management Project (3)**
Prerequisite: Completion of 27 credits of graduate coursework and TLMN 660. 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 the student’s current employer(s) 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.

**TMAN 610 Economics and Financial Analysis (3)**
This course critically examines the fundamental concepts of economics and financial analysis, with a special emphasis on technology-based projects. Specific topics examined include cost estimating, time value of money principles, present and future worth techniques, cash flows, rate of return, and benefit-cost analysis. It also focuses on complex situations and decisions technology managers commonly face in selecting the best alternatives. The tools and techniques used to analyze and solve complex economic situations typically confronted by technology managers are investigated. Cases are used to illustrate the application of these tools and techniques to help make better decisions in both public- and private-sector organizations.

**TMAN 611 Principles of Technology Management (3)**
(Formerly TMAN 601.) 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.

**TMAN 612 Financial Management for Technology Managers (3)**
Recommended: A background in accounting or UCSP 620. An in-depth overview of financial and managerial accounting in technology-based organizations is presented. Students are introduced to a variety of financial analysis tools from simple balance sheets to activity-based costing. The principles of financial accounting that underlie the preparation of financial statements are examined. The basis of asset valuation and allocation in technology-based organizations, including capital and technological assets, intellectual property, and other important intangibles, is discussed. Topics include cost of capital, cost management, product costing and pricing, capital budgeting, and financial controls for strategic purposes. Students learn and apply these concepts and techniques to achieve organizational goals in both public- and private-sector organizations.
TMAN 613 Marketing Technology-Based Products and Services (3)
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 are 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 Strategic Management of Technology and Innovation (3)
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 students to probe and report their own findings and recommendations on contemporary businesses and industrial sectors. The strategic framework for this course integrates (1) strategy setting, implementation, and assessment process; (2) historical analogies/cases of business innovation through maturation lifecycle; and (3) application of lessons learned in contemporary business cases in business, government, and nonprofit organizations.

TMAN 621 Systems Analysis and Operations Research (3)
(Formerly ENGM 615.) 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 Systems Development, Acquisition, and Management (3)
(Formerly TMAN 654.) 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 of the legal issues and the constraints of the organizational environment influencing the acquisition and implementation of systems is provided. 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 Systems Analysis and Design (3)
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 systems modeling, design, and implementation—major elements of information systems analysis—are discussed in the context of life-cycle phases. The concept and techniques of information systems models, such as data model, process model, and network model, are discussed in depth. An appreciation of the multidisciplinary approach needed for systems analysis and management will be gained through an understanding of the information systems project management techniques, tools, and skills required for successful completion of an information systems analysis and design project.
TMAN 632 Organizational Performance Management (3)
(Formerly TMAN 665.) 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, responsivenes, decisiveness, speed, quality, value, and customer satisfaction. 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.

TMAN 633 Managing People in Technology-Based Organizations (3)
Regardless of an organization’s technology, size, or mission, people are the common denominator, as managers cope with the challenges in today’s information-based and global economy. The focus of the course is on managing three levels of behavior in organizations: individual employee behavior, group behavior, and organizational behavior. Students study emerging organizational behavior issues facing dynamic, technology-based organizations such as knowledge management, work design, virtual organizations and teams, contingent workforce management, creativity/innovation, sociotechnical systems, the development of learning and boundaryless organizations, emotional intelligence, the global workforce, and the formulation of pay/retention strategies. Students have opportunities to link contemporary organizational behavior theories and their applications in technology-based organizations through the use of real-life examples, case studies, and current events.

TMAN 636 Knowledge Management (3)
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 Project Management (3)
(Also listed as PMAN 634.) 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.

TMAN 661 Systems Development and Management (3)
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, biotechnology systems, e-commerce systems, and organizational systems. These systems generally have multiple, interdependent subsystems, which interact in complex ways. The methods of system life-cycle 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.
TMAN 671 Seminar in Technology and Innovation Management (3)
(Formerly TMAN 670.) Prerequisite: Completion of 27 credits of graduate coursework. 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.

TMAN 690 Technology Management Project (3)
Prerequisite: Completion of 30 credits of graduate coursework and TMAN 671. 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 the student’s 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.

UCSP 600 Graduate Writing Workshop (0)
(Not intended to be an English as a Second Language, or 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.) The Graduate Writing Workshop is designed to help ensure that students have the level of writing and critical-thinking skills needed to successfully pursue a Graduate School degree or certificate. Through a combination of weekly readings, interactive participation, and editing and writing assignments, students learn how to create an effective graduate-level research essay. Workshop topics include how to identify a thesis topic, avoid logical fallacies, present and defend an argument, critically assess ideas using a set of valid criteria, select and integrate references to scholarly literature, employ relevant examples to illustrate key points, use citations appropriately to avoid plagiarism, and comply with APA guidelines.

UCSP 610 Library Skills for the Information Age (0)
(Must be completed within the first 6 credits of graduate study.) This course is designed to familiarize students with electronic library and information resources. The significant changes in how information is delivered makes 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 use efficiently and effectively a variety of electronic retrieval systems including the online catalog of the University System of Maryland, UMUC’s subscription databases, and the Web. 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 which are now available online. The Graduate School and the Information and Library Services office are proud to offer this material, which is critical for 21st-century leaders.

UCSP 620 Financial Accounting (0)
(Students without a background in accounting and finance are strongly advised to complete this course before enrolling in ADMN 630 or ADMN 631.) 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.

UCSP 621 Economics (0)
(Students without a background in accounting and finance are strongly advised to complete this course before enrolling in ADMN 630 or ADMN 631.) 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 opportunities cost, comparative advantage, economic efficiency, and the time value of money are explored in the context of business, government, and personal situations.
UCSP 630 Introduction to Research Methods (0)

(Students without a background in statistics are strongly advised to complete this course before enrolling in ADMN 638.) 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 decision making.

XCIO 693 CIO Processes (6)

First, models and simulations applicable to the information technology field are examined to identify the appropriate application of models and simulations to various strategic and operational situations. There will be an in-depth examination of model and simulation inputs and outputs to identify the optimal use of the various tools. Second, there will be an examination of the myriad of laws and regulations concerning the CIO environment. This will include a review of the Information Technology Management Reform Act (ITMRA), the Government Performance Results Act (GPRA), the Federal Acquisition St reamlining Act (FASA), and other laws and regulations derived from the aforementioned legislation. The application and implementation of the elements of the various laws and regulations will be reviewed. An end-of-seminar project will be developed and presented. The focus of the project will be on the application of material studied during the seminar.

XMBA 601 Overview of Management Theory, Strategic Thinking, and Global Management (7)

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 and feedback on presentation style and organizational quality.

XMBA 602 Organizational Leadership, Management of Human Resources, and Business Ethics (6)

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.

XMBA 603 Marketing, Entrepreneurship, and New Product Development (6)

This seminar focuses on business development strategies from the perspective of customer needs and preferences. It introduces market research approaches, 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.

XMBA 604 Technology and Operations Management (6)

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.
XMBA 605 Financial Systems and Management Accounting (6)
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, 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.

XMBA 606 International Business, Trade, and Business Law (6)
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.

XMBA 607 Strategy and Capstone Project (6)
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.

XMIT 601 IT and the Industry and Strategic Management (6)
This seminar presents an overview of the information technology (IT) industry. Its goal is to impart an understanding of how the many elements of IT work and what their limitations are. Mathematical and physical concepts helpful in thinking about the capabilities of IT and its applications are presented. These topics include information theory, digitization, probability, transmission media, integrated circuits, and optical switching. The seminar also 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 include historical perspectives on strategic technology planning, external and internal strategic analysis, technology forecasting, benchmarking, corporate intelligence, knowledge management, and implementation and control strategies.
XMIT 602 Human Resources, Leadership, and Project/Financial Management (6)

In this seminar, 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.

XMIT 603 Topics in IT and Systems Security and Risk Management (6)

In this seminar, 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 examined next. 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.

XMIT 604 Computing and Software Technology (6)

In this seminar, 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. The 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.
XMIT 605 Data Communications and Internet Technologies (6)

This seminar 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 IPv6, are examined. Internet applications and their 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.

XMIT 606 Systems Engineering and Capstone (6)

This seminar 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 examination of the systems engineering process places 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 (IT) domain are used to illustrate the systems engineering principles. The capstone integrates and applies the major concepts presented in all other coursework. Using case study methods, students identify best practices and appropriate technologies to implement effective IT decisions aligned with organizational goals. Strong emphasis is placed on viewing IT 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.

XTMN 601 Technology Overview and Strategic Management (6)

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 the first two seminars, program participants will create a business plan for a new venture introducing a new technology-based product or service.
XTMN 602 Marketing and Financing Technology-Based Ventures (6)

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 the first two seminars, 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 XTMN 606.

XTMN 603 Program and Operations Management (6)

In 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 this seminar to the venture created at the conclusion of XTMN 602.

XTMN 604 Electronic Commerce (6)

The rapid growth of e-commerce 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 e-commerce initiative. Topics covered include definitions of e-commerce, a brief history of e-commerce, e-commerce business models, and the role of technology. The economics of information goods, virtual value chains, and electronic markets are also presented. The impact of e-commerce on organizational strategy and industry structure and an in-depth assessment of a successful e-commerce strategy is presented. The discussion will also address the legal, social, ethical, regulatory, and other emerging issues related to e-commerce, electronic communities, and virtual organizations. Program participants will be presented with an outline of the technologies that enable e-commerce, 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 e-commerce 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 this seminar to the venture created at the conclusion of XTMN 602.
XTMN 605 Operational Performance and Human Resources (6)

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 XTMN 605 to the venture created at the conclusion of XTMN 602.

XTMN 606 Business Law and Global Management—Capstone (6)

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 XTMN 601 and 602 (or to their actual workplace) 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 XTMN 602 or the actual workplace selected.
University Policies

Policy on Student Classification for Admission, Tuition, and Charge Differential Purposes
(Approved by the Board of Regents August 28, 1990; Amended July 10, 1998; Amended November 27, 2000; Amended April 11, 2003)

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 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;

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 that 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 that are owned or rented and occupied by a parent, legal guardian, or spouse;

3. Maintains within Maryland substantially all personal property;

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

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

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

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

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 USM.

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 USM 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. Either of 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, or

2. The student is both (a) not financially independent and (b) is financially dependent upon a person who is 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 that 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 USM 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 indeed a permanent resident and the application of the criteria creates an unjust result. These procedures shall be filed with the Office of the Chancellor.

III. Definitions

A. Financially Dependent: For the purposes of this policy, a financially dependent student is one who is claimed as a dependent for tax purposes or who receives more than one-half of his or her support from another person during the twelve- (12-) month period immediately prior to the last published date for registration for the semester or session. If a student receives more than one-half of his or her support in the aggregate from more than one person, the student shall be considered financially dependent on the person providing the greater amount of support.

B. Financially Independent: A financially independent student is one who (1) declares himself or herself to be financially independent as defined herein; (2) does not appear as a dependent on the federal or state income tax return of any other person; (3) receives less than one-half of his or her support from any other person or persons; and (4) demonstrates that he or she provides through self-generated support one-half or more of his or her total expenses.

C. Parent: A parent may be a natural parent, or, if established by a court order recognized under the law of the state of Maryland, an adoptive parent.
D. Guardian: A guardian is a person so appointed by a court order recognized under the law of the state of Maryland.

E. Spouse: A spouse is a partner in a legally contracted marriage.

F. Child: A child is a natural child or a child legally adopted pursuant to a court order recognized under the law of Maryland.

G. Self-Generated: Self-generated describes income that is derived solely from compensation for an individual’s own efforts as evidenced, for example, by federal or state W-2 forms or IRS Form 1099, where interest income is based upon finances created from one’s own efforts. For the purposes of this policy, grants, stipends, awards, benefits, loans, and gifts (including federal and state aid, grants, and loans) may not be used as self-generated income.

H. Regular Employee: A regular employee is a person employed by the USM who is assigned to a state budget line or who is otherwise eligible to enroll in a state retirement system. Examples of categories not considered regular employees are graduate students, contingent employees, and independent contractors.

IV. Implementation

This policy as amended by the Board of Regents on November 27, 2000, shall be applied to all student residency classification decisions made on or after this date.

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 University System of Maryland policy or by federal, state, or local authorities. UMUC does not discriminate against or harass any person because of race, religion, color, creed, gender, marital status, age, national origin, ancestry, political affiliation, mental or physical disability, sexual orientation, or veteran status (including Vietnam Era veterans). All inquiries regarding UMUC’s nondiscrimination statement or compliance with applicable statutes and regulations should be directed to the director, Diversity Initiatives, Office of the President, 3501 University Boulevard East, Adelphi, MD 20783-8000 (Phone: 301-985-7940; Fax: 301-985-7678; E-mail: diversity-initiatives@umuc.edu; Web site: www.umuc.edu/diversity).

In accordance with this nondiscrimination statement and UMUC’s commitment to equal access, UMUC has revised Policy 40.3 (Policy and Procedures on Affirmative Action, Equal Opportunity, and Sexual Harassment). Students may access the revised policy and procedures online at www.umuc.edu/policy/admin/4030.shtml or may contact the Office of Diversity Initiatives to have a copy mailed to them.

Policy on Religious Observances

(UMUC Policy 51.00)

I. UMUC conforms to the Board of Regents Policy III-5.10 Concerning the Scheduling of Academic Assignments on Dates of Religious Observance, approved on January 11, 1990.

II. So that the academic programs and services of UMUC shall be available to all qualified students who have been admitted to its programs, regardless of their religious beliefs, students shall not be penalized because of observances of their religious holidays. Students who miss a course session because of an observance of their religious beliefs must be allowed

A. To make up any examinations, other written tests, or class work;

B. To have access to any handouts or other material distributed in class; and

C. To have the opportunity to obtain or review any duplicated lecture notes or slides presented in class.

III. UMUC prohibits scheduling examinations on the following religious holidays: Rosh Hashanah, Yom Kippur, and Good Friday.

Shared Governance

In accordance with Board of Regents I-6.00 Policy on Shared Governance in the University System of Maryland, UMUC 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
The Student Advisory Council consists of twelve (12) student representatives from UMUC locations worldwide and includes both undergraduate and graduate students. Student Advisory Council representatives serve on the overall University Advisory Council, the Graduate Council, and the Undergraduate Curriculum Committee. The Student Advisory Council provides senior management with critical input on a wide variety of institutional initiatives that affect students and student life at UMUC. To learn more about the Student Advisory Council or contact a representative, students should visit the Web page at www.umuc.edu/gov/stac.

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.

Financial Aid—Satisfactory Academic Progress, Graduate
(UMUC Policy 220.30)
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 University of Maryland University College 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 Standard 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, and S Grades, No Grade Reported, and Repeated Coursework

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

2. Incomplete (I) grades are not included in the GPA calculation and are considered a noncompletion of attempted coursework 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 coursework. 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.

Financial Aid Probation Status

Graduate students who fail to meet the minimum 3.0 cumulative grade point average 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 satisfactory academic progress (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 the student has 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 coursework 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. All decisions made by the Financial Aid Appeals Committee are final.

Disclosure of Student Records
(UMUC Policy 210.14)

I. Introduction

UMUC complies with the Family Educational Rights and Privacy Act (FERPA) of 1974 (also known as "the Buckley Amendment") which protects the privacy of students. In accordance with FERPA, this policy informs students of their rights to

A. Inspect and review their education records;
B. Seek an amendment of their education records, where appropriate;
C. Limit disclosure to others of personally identifiable information from education records without the student’s prior written consent; and
D. File formal complaints alleging a violation of FERPA with the Department of Education.

II. Definitions

A. “Student” is 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.

B. “Education records” are records that contain information directly related to a student that are maintained by UMUC or by a third party on behalf of UMUC. The following records are not education records:

1. Campus police or security ("law enforcement unit") records maintained solely for law enforcement purposes and maintained by that law enforcement unit.
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.
4. Records that contain only information relating to a person’s activities after that person is no longer a student at UMUC.

III. Inspection and Review of Education Records by Students

A. Right of Access

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

2. 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. Custodians of Education Records

The custodian of education records is

1. For UMUC-Adelphi: the registrar located in Adelphi, Maryland.
2. For UMUC-Asia: the registrar located in Tokyo, Japan.
3. For UMUC-Europe (except the Mannheim Campus): the registrar located in Heidelberg, Germany.
4. For Mannheim: the assistant to the dean located in Mannheim, Germany.
5. For Schwäbisch Gmünd: the registrar located in Adelphi, Maryland.

C. Procedure to Request Review and/or Inspection of Education Records

Requests for review and/or inspection of education records should be made in writing to the appropriate custodian of records, as defined above. The custodian of records or designee will comply with a request for access within a reasonable time by arranging for the student to review his or her records in the presence of a staff member. If facilities permit, a student may 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.

IV. Amendment of Education Records

Students may request an amendment of their education records in accordance with this procedure.

A. Request to Amend Education Records

A student who believes that his or her education record is inaccurate, misleading, or in violation of the student’s rights of privacy may ask the custodian of the education records to amend the record. The custodian of the education records or designee will decide whether to amend the record within a reasonable time after the request. If the custodian of the education records or designee decides not to amend the record, he or she will inform the student of the right to a hearing.

B. Hearings

1. A student may submit a written request for a hearing to challenge the content of his or her education records to the university registrar and vice provost, Student Affairs. The written request must state what records the student believes are inaccurate, misleading, or in violation of the privacy rights of the student.
2. A hearing will be conducted by the university registrar and vice provost, Student Affairs, or designee. The hearing may take place via telephone or video conferencing. The student will be given an 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.
3. Within a reasonable period of time after the conclusion of a hearing, the university registrar and vice provost, Student Affairs, will notify the student in writing of his decision. The written decision will include a summary of the evidence and the reasons for the decision.
   a. If the university registrar and vice provost, Student Affairs, determines that the education record is inaccurate, misleading, or in violation of the privacy of the student, the education records will be amended. The university registrar and vice provost, Student Affairs, will inform the student of the amendment in writing.
   b. If, as a result of the hearing, the university registrar and vice provost, Student Affairs, decides that the education record is not inaccurate, misleading, or otherwise in violation of the privacy rights of the student, he will inform the student of the right to place a statement in the record commenting on the contested information in the record or stating why he or she disagrees with the decision of the agency or institution, or both. Any such explanation will be 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.
V. Disclosures

UMUC will not disclose education records or the personally identifiable information contained therein unless permitted by 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; and
4. Be signed and dated by the student.

At the student’s request and expense, a copy of the records disclosed will be provided to the student.

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; and
   e. Previous educational institution most recently attended.

2. Directory information may be disclosed 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 custodian of the education records, as defined in this policy.

C. Additional Disclosures Without Prior Consent

Prior consent is not required for disclosure of education records or the personally identifiable information contained therein in the following circumstances:

1. The disclosure is to other school officials generally within the University System of Maryland (USM) 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. This includes, but is not limited to, faculty, staff members, and security personnel.
   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 or local 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.

12. 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.

VI. Right to File Complaint

A student alleging that UMUC has not complied with the Family Educational Rights and Privacy Act (FERPA) may file a student grievance in accordance with UMUC’s Student Grievance Procedures (Policy 130.70) or submit a written complaint to

Family Policy Compliance Office
U.S. Department of Education
400 Maryland Avenue, SW
Washington, DC 20202-4605
Administration

University System of Maryland

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DSc, George Washington University, 1988

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MS, University of Maryland, College Park, 1999
PhD, University of Maryland, College Park, 2002

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MS, Pennsylvania State University, 1978
MS, Boston University, 1984

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Bagnied, Mohsen A.
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PhD, University of Massachusetts, 1993

Banash, Mark A.
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BA, University of Pennsylvania, 1982
PhD, Princeton University, 1992
MBA, University of Maryland University College, 2002

Banescu, Bogdan C.
Collegiate Assistant Professor
BS, New York University, 1989
JD, Southwestern University, 1996
<table>
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<tr>
<th>Name</th>
<th>Title</th>
<th>Institution/Department/Program</th>
<th>Degree(s)</th>
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<tr>
<td>Barquin, Ramon C.</td>
<td>Adjunct Assistant Professor</td>
<td>BS, University of Puerto Rico, 1965</td>
<td>BSE, University of Puerto Rico, 1966</td>
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<td></td>
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<td>MS, University of Puerto Rico, 1969</td>
<td>MA, Massachusetts Institute of Technology, 1972</td>
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<td>PhD, Massachusetts Institute of Technology, 1974</td>
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<tr>
<td>Barrett, Glenda J.</td>
<td>Program Director, Human Resource Management, and Collegiate Professor</td>
<td>BA, Indiana University, 1973</td>
<td>MA, University of Iowa, 1977</td>
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<td></td>
<td></td>
<td>MA, George Washington University, 1992</td>
<td>PhD, George Washington University, 1993</td>
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<tr>
<td>Bartoo, Diane</td>
<td>Program Director, Health Care Administration, and Collegiate Associate Professor</td>
<td>BS, University of Florida, 1969</td>
<td>MS, University of Maryland, Baltimore, 1975</td>
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<td>MA, University of Southern Mississippi, 1984</td>
<td>PhD, University of Southern Mississippi, 1985</td>
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<tr>
<td>Battaglia, Paul</td>
<td>Adjunct Associate Professor</td>
<td>BS, Canisius College, 1968</td>
<td>MS, Butler University, 1974</td>
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<td>DBA, Nova Southeastern University, 1994</td>
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<tr>
<td>Beauchamp, Robert G.</td>
<td>Program Director, Environmental Management and Energy Resources Management and Policy, and Collegiate Associate Professor</td>
<td>BA, George Washington University, 1966</td>
<td>MS, George Washington University, 1969</td>
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<td>PhD, University of Maryland, College Park, 1988</td>
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<td>Beaudoin, Michael F.</td>
<td>Adjunct Professor</td>
<td>BS, University of Maine</td>
<td>MA, American University</td>
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<td>EdD, University of Massachusetts, 1975</td>
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<td>Bechtol, Dennis L.</td>
<td>Adjunct Assistant Professor</td>
<td>BS, University of New Mexico, 1994</td>
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<td>Belding, John A.</td>
<td>Adjunct Assistant Professor</td>
<td>BS, University of Alabama, 1965</td>
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<td>MS, George Washington University, 1973</td>
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<td>Benson, Keith J.</td>
<td>Adjunct Assistant Professor</td>
<td>BS, University of Maryland University College, 1988</td>
<td>MHA, Pennsylvania State University, 1991</td>
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<td>PhD, Pennsylvania State University, 2001</td>
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<td>Berezdivan, Robert</td>
<td>Adjunct Professor</td>
<td>BS, University of Florida, 1965</td>
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<td>PhD, University of California, Berkeley, 1972</td>
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<td>Berkowitz, Joan</td>
<td>Adjunct Professor</td>
<td>BA, Swarthmore College, 1952</td>
<td>PhD, University of Illinois, 1955</td>
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<td>Bernath, Ulrich</td>
<td>Adjunct Professor</td>
<td>PhD, Carl von Ossietzky University of Oldenburg (Germany), 2001</td>
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<tr>
<td>Betz, Frederick</td>
<td>Program Director, Management of Technological Systems, and Collegiate Associate Professor</td>
<td>BS, University of Chicago, 1958</td>
<td>PhD, University of California, Berkeley, 1965</td>
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<tr>
<td>Bishop, Tana</td>
<td>Associate Dean, Administration, and Collegiate Assistant Professor</td>
<td>BA, University of Maryland University College, 1987</td>
<td>MA, University of Hawaii, 1990</td>
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<td>PhD, University of Maryland, College Park, 2002</td>
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<td>Blank, Murray D.</td>
<td>Adjunct Associate Professor</td>
<td>BS, U.S. Naval Academy, 1958</td>
<td>MS, George Washington University, 1970</td>
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<td>MBA, Loyola College in Maryland, 1985</td>
<td>EdD, George Washington University, 1995</td>
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<td>Blazy, Louis J.</td>
<td>Adjunct Professor</td>
<td>BA, George Mason University, 1979</td>
<td>MA, George Mason University, 1981</td>
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<td>MBA, George Washington University</td>
<td>PhD, University of Maryland, College Park, 1985</td>
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<tr>
<td>Boatwright, Earl W.</td>
<td>Adjunct Professor</td>
<td>BS, University of Alabama, 1967</td>
<td>MBA, University of Southern Mississippi, 1970</td>
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<td>PhD, University of Arkansas, 1983</td>
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<td>Boleta, Monica S.</td>
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<td>BS, Fordham University, 1989</td>
<td>MA, University of Maryland, College Park, 1993</td>
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<td>PhD, University of Maryland, College Park, 1998</td>
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<td>Bond, Helen</td>
<td>Program Director, Education, and Collegiate Associate Professor</td>
<td>BS, Ohio State University, 1992</td>
<td>MA, West Virginia University, 1995</td>
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<td>PhD, Virginia Polytechnic Institute and State University, 2001</td>
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<td>Bonner, Kimberly M.</td>
<td>Adjunct Associate Professor</td>
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<td>JD, University of Virginia, 1996</td>
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<td>Boon, John E.</td>
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<td>Borchini, Ezio</td>
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<td>BS, University of Maryland, College Park</td>
<td>MS, Marymount University, 1992</td>
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<td></td>
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<td>JD, Catholic University of America, 1997</td>
<td>LLM, George Washington University, 1998</td>
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<tr>
<td>Borne, Kirk D.</td>
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<td>MS, California Institute of Technology, 1980</td>
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<td>Bosin, Morris R.</td>
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<td>MA, American University, 1965</td>
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<td>PhD, George Washington University, 1984</td>
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<td>Bouldin, Agnes R.</td>
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<td>MA, Central Michigan University, 1980</td>
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<td>PhD, University of Pittsburgh, 1988</td>
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<td>Bouterie, Larry</td>
<td>Adjunct Associate Professor</td>
<td>BS, Loyola University of the South, 1974</td>
<td>MS, University of Southern California, 1980</td>
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<td>Bouvin, David D.</td>
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<td>BA, Roberts Wesleyan College, 1992</td>
<td>MBA, University of Sarasota, 1998</td>
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<td>Bowe-Johnson, Brenda</td>
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<td>BA, Morgan State University, 1962</td>
<td>MS, Morgan State University, 1981</td>
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<tr>
<td>Bradway, Lisa</td>
<td>Adjunct Assistant Professor</td>
<td>BBA, Texas A&amp;M University, 1982</td>
<td>PhD, University of Illinois at Chicago, 2002</td>
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<td>Brodie, Steven G.</td>
<td>Adjunct Assistant Professor</td>
<td>PhD, University of New Mexico, 1969</td>
<td>BS, University of Texas, 1989</td>
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<tr>
<td>Broglio, Carlo J.</td>
<td>Program Director, Information and Telecommunication Studies, and Collegiate Professor</td>
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<td>MS, University of Maryland, College Park, 1969</td>
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<tr>
<td>Bundes, Robert W.</td>
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<td>BA, George Washington University, 1977</td>
<td>MA, Michigan State University, 1980</td>
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<td>Burgess, William</td>
<td>Adjunct Assistant Professor</td>
<td>BS, Frostburg State College, 1984</td>
<td>MA, University of South Dakota, 1992</td>
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<td>Bush-Goddard, Stephanie P.</td>
<td>Adjunct Associate Professor</td>
<td>BS, University of Memphis, 1991</td>
<td>MS, University of Michigan, 1997</td>
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<td>Butler, Stephen A.</td>
<td>Adjunct Associate Professor</td>
<td>BSBA, Drake University, 1976</td>
<td>MBA, University of Iowa, 1977</td>
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<tr>
<td>Callahan, Caryl A.</td>
<td>Adjunct Professor</td>
<td>BA, Colby College</td>
<td>PhD, Harvard University, 1978</td>
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<tr>
<td>Campbell, Jennifer B.</td>
<td>Adjunct Assistant Professor</td>
<td>BS, Howard University, 1996</td>
<td>MHS, George Washington University, 1998</td>
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<tr>
<td>Cantor, Eugene H.</td>
<td>Adjunct Professor</td>
<td>BS, University of Maryland, College Park, 1972</td>
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<td>Capio, Ralph</td>
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<td>JD, Albany Law School, Union University, 1973</td>
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<td>Carswell, Alan D.</td>
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<td>BS, Northwestern University, 1977</td>
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<td>BA, York University (Canada), 1964</td>
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<td>Champ, Michael A.</td>
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<td>Chan, Paul H.</td>
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<td>PhD, University of Missouri, 1980</td>
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Chang, Kai  
*Adjunct Associate Professor*  
MD, Hebei Medical University (China), 1983  
MM, Hebei Medical University (China), 1986

Chasen, Steven P.  
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Coronel, Francisco F.  
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Cummings, Jeffrey L.  
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Cundiff, Kirby R.  
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BS, Truman State University, 1987  
PhD, University of Illinois at Urbana-Champaign, 1996  
MS, University of Illinois at Urbana-Champaign, 1998
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<td>Dabbah, Roger</td>
<td>Adjunct Associate Professor</td>
<td>BA, University of Minnesota, 1961 MS, University of Minnesota, 1965 PhD, University of Maryland, College Park, 1970 MBA, University of Dayton, 1976</td>
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<td>Dampier, David A.</td>
<td>Adjunct Associate Professor</td>
<td>BS, University of Texas at El Paso, 1984 MS, Naval Postgraduate School, 1990 PhD, Naval Postgraduate School, 1994</td>
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<td>Dann, Charles E.</td>
<td>Adjunct Associate Professor</td>
<td>BA, University of Maryland, College Park, 1968 JD, University of Akron, 1973 MS, University of Maryland University College, 2000</td>
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<td>Das, Prasanta</td>
<td>Adjunct Associate Professor</td>
<td>BS, Bardwan University (India), 1966 MS, University of Vermont, 1971 PhD, Case Western Reserve University, 1976 MS, Johns Hopkins University, 1984</td>
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<td>Davis, Ronnie H.</td>
<td>Adjunct Professor</td>
<td>BBA, Kent State University, 1967 MA, University of Akron, 1969 MA, University of Pittsburgh, 1974 PhD, University of Pittsburgh, 1975</td>
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<td>Deacon, Ronald W.</td>
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<td>BS, Johns Hopkins University, 1965 MS, University of Massachusetts, 1967 PhD, University of Massachusetts, 1970</td>
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<td>Debackey, George T.</td>
<td>Adjunct Associate Professor</td>
<td>BS, Drake University, 1972 MBA, Southern Methodist University, 1974</td>
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<td>Deblasis, Samuel J.</td>
<td>Adjunct Associate Professor</td>
<td>BS, University of Arizona, 1979 JD, University of Dayton, 1982</td>
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<td>Adjunct Associate Professor</td>
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<td>Dell’Amore, Carol J.</td>
<td>Collegiate Associate Professor</td>
<td>BA, University of Maryland, College Park, 1968 MS, University of Maryland, College Park, 1979 MA, University of Maryland, College Park, 1992 PhD, University of Maryland, College Park, 1997</td>
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<td>Deming, Basil S.</td>
<td>Adjunct Professor</td>
<td>BS, John Carroll University, 1962 MA, Case Western Reserve University, 1968 PhD, Kent State University, 1971</td>
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<td>Denisov, Gennady A.</td>
<td>Adjunct Assistant Professor</td>
<td>BS, Rostov State University (Russian Federation), 1979 MS, Institute of Physical Chemistry, Academy of Sciences of the Union of Soviet Socialist Republics, 1988 PhD, Institute of Physical Chemistry, Academy of Sciences of the Union of Soviet Socialist Republics, 1989</td>
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<td>Dent, Eric B.</td>
<td>Adjunct Professor</td>
<td>BS, Emory University, 1983 MS, Emory University, 1983 MBA, George Washington University, 1986 PhD, George Washington University, 1997</td>
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<td>Desantis, Mark R.</td>
<td>Adjunct Assistant Professor</td>
<td>BA, University of Dayton, 1981 MBA, University of Dayton, 1983 MS, American University, 1988 PhD, George Mason University, 1993</td>
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<td>Desimone, Marc</td>
<td>Adjunct Associate Professor</td>
<td>BA, Morgan State University, 1976 MA, St. Mary’s Seminary and University, 1980 PhD, University of Maryland, College Park, 1994</td>
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<td>DeZee, Matthew R.</td>
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<td>BA, Syracuse University, 1973 MS, Florida State University, 1977 PhD, Florida State University, 1982</td>
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<td>Dheeriya, Prakash</td>
<td>Adjunct Professor</td>
<td>BCom, University of Bombay (India), 1981 MMS, University of Bombay (India), 1983 PhD, University of North Texas, 1987</td>
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<td>Diggins, Carol</td>
<td>Adjunct Associate Professor</td>
<td>BA, University of Oklahoma, 1970 MA, George Washington University, 1974</td>
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<td>Dixon, Michael</td>
<td>Adjunct Associate Professor</td>
<td>BPharm, University of London (England), 1960 PhD, City University London (England), 1982</td>
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<td>D’Mello, Joseph G.</td>
<td>Adjunct Associate Professor</td>
<td>BS, Bangalore University (India), 1976 MS, Bangalore University (India), 1976 MS, Ohio State University, 1982 PhD, Ohio State University, 1982 MBA, Northwestern University, 2001</td>
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<td>Doll, Barbara A.</td>
<td>Adjunct Assistant Professor</td>
<td>BS, University of Wisconsin–Whitewater, 1985 MBA, University of Wisconsin–Whitewater, 1986 PhD, University of Wisconsin–Milwaukee, 1993</td>
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<td>Donato, Karen A.</td>
<td>Adjunct Assistant Professor</td>
<td>BSE, University of Pennsylvania, 1981 MS, Ohio University, 1985 PhD, Ohio University, 1987</td>
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<td>Driver, Michaela</td>
<td>Adjunct Assistant Professor</td>
<td>BS, University of Alabama, 1993 MA, University of Alabama, 1995 PhD, University of Alabama, 1997</td>
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<td>Duplantier, Stephen J.</td>
<td>Adjunct Assistant Professor</td>
<td>MS, Indiana University, 1972 PhD, University of Southern Mississippi, 1992</td>
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<td>Durrani, Sajjad H.</td>
<td>Adjunct Professor</td>
<td>BA, Government College (Pakistan), 1946 BS, Engineering College (Pakistan), 1949 MS, Manchester Municipal College of Technology (England), 1953 DSc, University of New Mexico, 1962</td>
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<td>Edwards, Kathleen F.</td>
<td>Program Director, Health Care Administration, and Collegiate Professor</td>
<td>BS, University of Maryland, College Park, 1967</td>
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<td>PhD, Catholic University of America, 1981</td>
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<td>Egan, John T.</td>
<td>Adjunct Professor</td>
<td>BS, Saint Louis University, 1965</td>
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<td>PhD, State University of New York at Buffalo, 1976</td>
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<td>Eickelmann, Nancy</td>
<td>Adjunct Associate Professor</td>
<td>BS, San Diego State University, 1988</td>
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<td>MS, University of California, Irvine, 1994</td>
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<td>Eleo, Rufus</td>
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<td>BS, University of Missouri, 1976</td>
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<td>Elgin, Margaret A.</td>
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<td>BA, Western Maryland College, 1967</td>
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<td>El Karamany, Yehia</td>
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<td>BS, Cairo University (Egypt), 1966</td>
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<td>Fawson, Trude J.</td>
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<td>Program Director, Procurement and Contract Management, and Collegiate Professor</td>
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<td>Fortino, Andres</td>
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<td>Frank, Ilene</td>
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<td>Frank, Michael S.</td>
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<td>Gabi, Mark A.</td>
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<td>Ganguly, Pradeep</td>
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<td>Gay, Billy E.</td>
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<td>Gay, John</td>
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<td>Gearing, John K.</td>
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<td>Gerry, Frank</td>
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<td>Gibbs, Philip A.</td>
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<td>Gibson, Ulric</td>
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<td>Gietka, Gerald A.</td>
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<td>Gilbert, Daniel E.</td>
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<td>Giles, Inez</td>
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<td>BAEd, Carlow College, 1972</td>
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<td>Gilmore, Harold L.</td>
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<td>BS, Norwich University</td>
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<td>Glass, Paul W.</td>
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<td>AB, Columbia University, 1961</td>
<td>BA, The Citadel, 1972</td>
<td>MA, Fletcher School of Law and Diplomacy, Tufts University, 1972</td>
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<td>PhD, Columbia University, 1964</td>
<td>MA, George Washington University, 1975</td>
<td>DrJur, Free University Berlin (Germany), 1974</td>
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<td>Glickstein, Ira S.</td>
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<td>BEE, City College of New York, 1961</td>
<td>BS, Louisiana State University, 1970</td>
<td>BS, University of Wisconsin, 1953</td>
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<td>MS, State University of New York at Binghamton, 1990</td>
<td>MA, California State University, 1977</td>
<td>MA, University of South Dakota, 1954</td>
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<td>PhD, State University of New York at Binghamton, 1996</td>
<td>DA, George Mason University, 1977</td>
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<td>Chair, Information and Telecommunications Studies, and Collegiate Professor</td>
<td>Adjunct Professor</td>
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<td>BAt, Western Illinois University, 1969</td>
<td>LLB, Agra University (India), 1961</td>
<td>BS, Park College, 1990</td>
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<td>AM, University of Illinois, 1970</td>
<td>MBA, University of Maryland, College Park, 1980</td>
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<td>PhD, University of Maryland, Baltimore, 1993</td>
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<td>Goldstein, Jerry M.</td>
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<td>BA, University of Toledo, 1969</td>
<td>BA, California State College, 1965</td>
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<td>MAT, State University of New York College at Brockport, 1971</td>
<td>PhD, Iowa State University, 1978</td>
<td>BA, University of Connecticut, 1968</td>
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<td>MA, University of Toledo, 1972</td>
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<td>Gray, George L.</td>
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<td>BA, University of Delhi (India), 1979</td>
<td>BA, California State College, 1965</td>
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<td>PhD, University of Wisconsin-Milwaukee, 1991</td>
<td>MBA, Ohio State University, 1987</td>
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<td>BE, Beijing University of Posts and Telecommunications (China), 1988</td>
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<td>MBA, University of International Business and Economics (China), 1994</td>
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<td>Green, Donald J.</td>
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<td>BS, University of Maryland University College, 1986</td>
<td>BA, Michigan State University, 1985</td>
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<td>MS, University of Maryland University College, 1996</td>
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<td>Goodman, Jeffrey H.</td>
<td>PhD, Western Michigan University, 2000</td>
<td>MA, Cleveland State University, 1991</td>
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<td>MS, Harvard University, 1972</td>
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<td>BA, Fordham University, 1963</td>
<td>BS, University of Maryland University College, 1989</td>
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<td>JD, Georgetown University, 1969</td>
<td>MS, American University, 1992</td>
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<td>JD, University of Maryland, Baltimore, 1998</td>
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<td>BS, Pennsylvania State University, 1967</td>
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<td>Hallion, Marie E.</td>
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<td>PhD, University of Maryland, College Park, 1992</td>
<td>PhD, University of Maryland, College Park, 1968</td>
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<td>Hardy, Stuart B.</td>
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<td>Huggins-Williams, Nedra</td>
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<td>Jacobs, Norma M.</td>
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<td>Jaffe, Roger J.</td>
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<td>BA, University of Maryland University College, 2000</td>
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<td>Jain, Bharat A.</td>
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<td>Jain, Kamlesh</td>
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<td>BStat, Indian Statistical Institute, 1966 MStat, Indian Statistical Institute, 1967 MS, University of California, Los Angeles, 1973 PhD, University of Maryland, College Park, 1993</td>
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<td>Jain, Vinod</td>
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<td>BSS, Indian Statistical Institute (India), 1966 MSS, Indian Statistical Institute (India), 1967 MSM, University of California, Los Angeles, 1973 PhD, University of Maryland, College Park, 1994</td>
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<td>Jamsa, Kris</td>
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<td>BS, U.S. Air Force Academy, 1983 MS, University of Nevada, Las Vegas, 1997 PhD, Arizona State University, 1993 MBA, San Diego State University, 1997</td>
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<td>Jerome, Robert W.</td>
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<td>BA, Pomona College, 1970 MA, Fletcher School of Law and Diplomacy, Tufts University, 1972 PhD, University of Geneva (Switzerland), 1981</td>
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<td>Jin, Zhenyi (Jenny)</td>
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<td>BS, Nanjing University (China), 1987 MS, George Mason University, 1993 PhD, George Mason University, 2001</td>
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<td>Johnson, James W.</td>
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<td>BS, Prairie View A&amp;M University, 1963 MS, University of Maryland, College Park, 1969 DBSc, George Washington University, 1981 MS, George Washington University, 1990</td>
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<td>Jones, Gary</td>
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<td>MBA, University of Richmond, 1989</td>
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<td>Jones, John W.</td>
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<td>BA, University of Cincinnati PhD, DePaul University, 1980 MBA, Keller Graduate School of Management, DeVry University, 2000</td>
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<td>Joseph, Larry M.</td>
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<td>Juarrero, Alicia</td>
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<td>Kahl, Alfred</td>
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<td>Kashangaki, Thomas</td>
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<td>BS, University of Michigan, 1987 MS, University of Michigan, 1989 PhD, University of Michigan, 1992</td>
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Kaskowitz, Gary  
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BS, University of Illinois, 1983  
MBA, Averett College, 1990  
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MA, New York University, 1964
PhD, New York University, 1978

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BA, Northland College, 1978
MS, Saint Cloud State University, 1981
PhD, Louisiana State University, 1990
MBA, Heriot-Watt University (Scotland), 1996

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MA, Pennsylvania State University, 1986
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MA, Case Western Reserve University, 1970
PhD, Case Western Reserve University, 1972

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MS, American University, 1986
MA, Columbia University, 1991
EdD, Columbia University, 1994

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MAS, Johns Hopkins University, 1977

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MS, Rensselaer Polytechnic Institute, 1967
PhD, University of Pennsylvania, 1975
JD, American University, 1981

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MS, University of Minnesota, 1968
MPA, George Washington University, 1973
DPA, George Washington University, 1977

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PhD, Baylor College of Medicine, 1998

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MA, Yale University, 1963
DrJr, University of Bonn (Germany), 1967

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PhD, University of Maryland, College Park, 1993

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MSE, Johns Hopkins University, 1969
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PhD, Johns Hopkins University, 1979
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PhD, George Mason University, 1995

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MPH, Rutgers Medical School, 1988
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MA, University of the South Pacific, 1985  
PhD, Concordia University, 1991

Nance, Kara L.  
Adjunct Associate Professor  
MS, University of Oklahoma, 1986  
PhD, University of Oklahoma, 1991
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<th>Name</th>
<th>Title</th>
<th>Institution(s)</th>
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<td>Napjus, Chris N.</td>
<td>Adjunct Associate Professor</td>
<td>BA, Cornell University, 1963&lt;br&gt;MS, University of Washington, 1968&lt;br&gt;PhD, University of Washington, 1969&lt;br&gt;MBA, Bryant College, 1976</td>
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<td>Nicolay, John A.</td>
<td>Adjunct Professor</td>
<td>BA, University of Maryland, College Park, 1976&lt;br&gt;MA, Virginia Polytechnic Institute and State University, 1986&lt;br&gt;PhD, Virginia Polytechnic Institute and State University, 1990</td>
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<td>Olson, Edwin E.</td>
<td>Adjunct Professor</td>
<td>BA, St. Olaf College, 1959&lt;br&gt;MA, American University, 1961&lt;br&gt;PhD, American University, 1967</td>
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<td>Olson, Susan B.</td>
<td>Adjunct Associate Professor</td>
<td>AB, Regis College, 1964&lt;br&gt;MA, Fordham University, 1966&lt;br&gt;PhD, University of Illinois, 1976</td>
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<td>Nash, Peter D.</td>
<td>Adjunct Associate Professor</td>
<td>BA, University of Wisconsin–Madison, 1973&lt;br&gt;MA, University of Washington, Seattle, 1975&lt;br&gt;PhD, University of California, Berkeley, 1981</td>
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<td>Nkadi, Eucharia</td>
<td>Adjunct Professor</td>
<td>BS, Creighton University, 1977&lt;br&gt;MS, University of Minnesota, 1978&lt;br&gt;PhD, University of Minnesota, 1982&lt;br&gt;JD, Florida State University, 1993</td>
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<td>Nejo, Olukayode</td>
<td>Adjunct Professor</td>
<td>MS, University of Lagos (Nigeria), 1987&lt;br&gt;MS, University of Maryland, College Park, 1994&lt;br&gt;PhD, University of Michigan, 1999</td>
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<td>Nejo, Olukayode (Kay)</td>
<td>Adjunct Professor</td>
<td>MS, University of Lagos (Nigeria), 1987&lt;br&gt;MS, University of Maryland, College Park, 1994&lt;br&gt;PhD, University of Michigan, 1999</td>
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<td>Olson, Susan B.</td>
<td>Adjunct Associate Professor</td>
<td>AB, Regis College, 1964&lt;br&gt;MA, Fordham University, 1966&lt;br&gt;PhD, University of Illinois, 1976</td>
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<td>Nejo, Olukayode</td>
<td>Adjunct Professor</td>
<td>MS, University of Lagos (Nigeria), 1987&lt;br&gt;MS, University of Maryland, College Park, 1994&lt;br&gt;PhD, University of Michigan, 1999</td>
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<td>Nkadi, Eucharia</td>
<td>Adjunct Professor</td>
<td>BS, Creighton University, 1977&lt;br&gt;MS, University of Minnesota, 1978&lt;br&gt;PhD, University of Minnesota, 1982&lt;br&gt;JD, Florida State University, 1993</td>
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<td>Nkadi, Eucharia</td>
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<td>BS, Creighton University, 1977&lt;br&gt;MS, University of Minnesota, 1978&lt;br&gt;PhD, University of Minnesota, 1982&lt;br&gt;JD, Florida State University, 1993</td>
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<td>Officer, Alvin D.</td>
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<td>BS, Kansas State College&lt;br&gt;MEd, University of Pittsburgh, 1972&lt;br&gt;PhD, University of Pittsburgh, 1974</td>
</tr>
<tr>
<td>Pal, Kausik B.</td>
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<td>MSc, University of Delhi, 1978&lt;br&gt;Engg, University of Delhi, 1977&lt;br&gt;PhD, University of Delhi, 1982&lt;br&gt;MBA, American University of Dubai, 1989&lt;br&gt;MBA, University of Maryland, College Park, 1990</td>
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<td>Pandit, Ganesh M.</td>
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<td>BCom, University of Bombay (India), 1983&lt;br&gt;MBA, University of Louisiana at Monroe, 1990&lt;br&gt;DBA, Louisiana Tech University, 1994</td>
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<td>Pang, Leslie</td>
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<td>BS, University of Hawaii, 1974&lt;br&gt;MS, University of Nebraska, 1979&lt;br&gt;PhD, University of Utah, 1983&lt;br&gt;MBA, University of Maryland, College Park, 1988</td>
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<td>Name</td>
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<td>Parham, Gregory</td>
<td>Adjunct Associate Professor</td>
<td>BS, Ohio State University, 1975</td>
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<td>DVM, Ohio State University, 1980</td>
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<td>MS, Johns Hopkins University, 1986</td>
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<td>Parnell, John A.</td>
<td>Adjunct Professor</td>
<td>BSBA, East Carolina University, 1984</td>
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<td>MBA, East Carolina University, 1985</td>
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<td>EdD, Campbell University, 1990</td>
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<td>PhD, University of Memphis, 1992</td>
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<td>Pashtenko, Valentin H.</td>
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<td>BS, Charter Oak State College, 1992</td>
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<td>MBA, Quinnipiac University, 1995</td>
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<td>PhD, University of Rhode Island, 2001</td>
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<td>Pauli, Richard A.</td>
<td>Adjunct Associate Professor</td>
<td>BA, Hiram College, 1970</td>
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<td>JD, Boston University, 1973</td>
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<td>MA, MacGregor School of Antioch University</td>
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<td>Peacock, Bruce E.</td>
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<td>BS, Oklahoma State University, 1978</td>
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<td>MS, New Mexico State University, 1984</td>
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<td>PhD, University of Arizona, 1994</td>
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<td>Peters, Laurence</td>
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<td>PhD, University of Michigan, Ann Arbor, 1986</td>
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<td>Petersohn, Henry</td>
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<td>MBA, Temple University, 1964</td>
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<td>PhD, American University, 1967</td>
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<td>Petrello, George J.</td>
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<td>BA, Montclair State University</td>
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<td>BCPE, American College of Forensic Examiners</td>
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<td>MBA, Seton Hall University</td>
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<td>Pfoertsch, Waldemar</td>
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<td>Phillips, Bertrand P.</td>
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<td>BS, San Francisco State University, 1954</td>
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<td>MS, San Francisco State University, 1956</td>
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<td>EdD, Columbia University, 1965</td>
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<td>Pickering, Willa</td>
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<td>PhD, George Mason University, 2003</td>
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<td>Pillutla, Sharma</td>
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<td>MSS, University of Bombay (India), 1985</td>
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<td>Pishcheva, Diana</td>
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<td>PhD, Syracuse University, 1972</td>
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<td>Power, Frank R.</td>
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<td>BCE, Manhattan College, 1960</td>
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<td>MS, Cornell University, 1964</td>
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<td>JD, New York University, 1966</td>
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<td>Proacccino, Joseph A.</td>
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<td>MFS, George Washington University, 1979</td>
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<td>Pugh, John C.</td>
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<td>Rabatin, Angela J.</td>
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<td>JD, Duquesne University, 1981</td>
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<td>Raider, Alfred S.</td>
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<td>Ramkumar, Vasant C.</td>
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<td>MS, City University of New York, 1985</td>
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<td>Reddy, William D.</td>
<td>Adjunct Professor</td>
<td>BS, Saint Louis University, 1960</td>
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<td>MBA, Loyola College (Maryland), 1978</td>
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<td>Reinsch, William A.</td>
<td>Adjunct Associate Professor</td>
<td>BA, Johns Hopkins University, 1968</td>
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<td>MA, Johns Hopkins University, 1969</td>
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<td>Reynolds, Arthur</td>
<td>Adjunct Associate Professor</td>
<td>BA, City College of New York, 1970</td>
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<td>MA, University of Minnesota, 1973</td>
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<td>MHA, University of Minnesota, 1976</td>
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<td>JD, William Mitchell College of Law, 1977</td>
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<td>Name</td>
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<td>Rhodes, Shelton</td>
<td>Adjunct Associate Professor</td>
<td>BA, Virginia Military Institute, 1977</td>
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<td>PhD, Old Dominion University, 1994</td>
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<td>Ricci, Frederick A.</td>
<td>Adjunct Associate Professor</td>
<td>PhD, Boston University, 1972</td>
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<td>Richards, Francis M.</td>
<td>Adjunct Assistant Professor</td>
<td>BA, California State University, Long Beach, 1968</td>
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<td>MPA, University of Southern California, 1977</td>
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<td>MGA, University of Maryland University College, 1991</td>
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<tr>
<td>Richardson, John M.</td>
<td>Adjunct Professor</td>
<td>BA, University of Colorado, 1942</td>
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<td>PhD, Harvard University, 1951</td>
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<tr>
<td>Rife, Patricia</td>
<td>Adjunct Assistant Professor</td>
<td>BS, Grand Valley State University, 1978</td>
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<td>Riley, Michael J.</td>
<td>Program Director, Master of Business Administration, and Collegiate Professor</td>
<td>BS, U.S. Naval Academy, 1965</td>
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<td>DBA, Harvard University, 1977</td>
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<td>Rinke, Wolfe</td>
<td>Adjunct Associate Professor</td>
<td>BS, Drexel University, 1968</td>
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<td>PhD, University of Wisconsin, 1979</td>
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<td>Roberson, Ponchitta J.</td>
<td>Adjunct Associate Professor</td>
<td>BA, District of Columbia Teachers College, 1974</td>
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<td>EdD, George Washington University, 1998</td>
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<td>Roberts, Judith M.</td>
<td>Adjunct Associate Professor</td>
<td>BA, York University (Canada), 1968</td>
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<td>Robinson-Backmon, Ida</td>
<td>Adjunct Associate Professor</td>
<td>BA, Florida University, 1970</td>
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<td>MBA, St. John's University, 1980</td>
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<td>Roblyer, Margaret D.</td>
<td>Adjunct Professor</td>
<td>BA, University of Maryland, College Park, 1969</td>
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<td>PhD, Florida State University, 1978</td>
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<td>Roman, Cynthia</td>
<td>Adjunct Associate Professor</td>
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<td>EdD, Virginia Polytechnic Institute and State University, 1994</td>
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<td>Rosen, Theodore H.</td>
<td>Adjunct Professor</td>
<td>BA, George Washington University, 1969</td>
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<td>PhD, George Washington University, 1984</td>
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<td>Ross, Jane</td>
<td>Program Director, Master of Business Administration, and Collegiate Professor</td>
<td>PhD, University of Cambridge (England), 1987</td>
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<tr>
<td>Rowe, Joyce M.</td>
<td>Adjunct Professor</td>
<td>BS, Virginia Commonwealth University, 1967</td>
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<td>PhD, Virginia Commonwealth University, 1991</td>
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<td>Rubin, Eugene</td>
<td>Chair, Distance Education, and Collegiate Professor</td>
<td>BA, Ohio Wesleyan University, 1963</td>
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<td>MA, University of Michigan, 1971</td>
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<td>Russotto, Thomas</td>
<td>Adjunct Assistant Professor</td>
<td>BS, Stevens Institute of Technology, 1966</td>
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<td>MBA, George Washington University, 1991</td>
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<td>Ryan, Daniel J.</td>
<td>Adjunct Professor</td>
<td>BS, Tulane University, 1966</td>
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<td>MBA, California State University, 1977</td>
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<td>Ryan, Mary E.</td>
<td>Adjunct Assistant Professor</td>
<td>BA, State University of New York at Binghamton, 1981</td>
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<td>Saad, Ashraf</td>
<td>Adjunct Assistant Professor</td>
<td>BS, Ain-Shams University (Egypt), 1988</td>
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<td>PhD, Vanderbilt University, 1996</td>
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<td>Safanov, Igor V.</td>
<td>Adjunct Associate Professor</td>
<td>MS, Polytechnic Institute (Ukraine), 1963</td>
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<td>Salimi, Anwar Y.</td>
<td>Adjunct Professor</td>
<td>PhD, University of California, Los Angeles, 1984</td>
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<td>Salmon, Peter M.</td>
<td>Adjunct Assistant Professor</td>
<td>BS, University of Cape Town (South Africa), 1980</td>
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<td>PhD, Stanford University, 1989</td>
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<td>Samonis, Val</td>
<td>Adjunct Associate Professor</td>
<td>MA, Gdansk University of Technology (Poland), 1974</td>
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<td>Sample, Travis L.</td>
<td>Adjunct Associate Professor</td>
<td>BS, University of Houston, 1964</td>
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| 188 | 2003–2004 Graduate Catalog |
Sapp, J. Robert  
*Adjunct Assistant Professor*  
BA, University of Maryland, Baltimore County, 1986  
MA, University of Maryland, Baltimore County, 1990  
MS, Johns Hopkins University, 1992  
EdD, University of Pennsylvania, 2001

Satzer, Roger S.  
*Adjunct Assistant Professor*  
MS, Loyola University (Los Angeles), 1965  
MPA, George Washington University, 1976  
MS, Stanford University, 1978

Saunders, John H.  
*Adjunct Associate Professor*  
BS, Pennsylvania State University, 1971  
MBA, George Washington University, 1983  
PhD, George Washington University, 1994

Savage, Howard A.  
*Adjunct Associate Professor*  
BA, Oklahoma City University, 1968  
PhD, University of Texas at Austin, 1978  
MA, Johns Hopkins University, 1985

Sax, Christina  
*Adjunct Associate Professor*  
BS, University of Rochester, 1982  
PhD, Medical College of Virginia, Virginia Commonwealth University, 1987

Sayala, Dash  
*Adjunct Associate Professor*  
BS, Osmania University (India), 1962  
MS, Osmania University (India), 1964  
MS, University of New Mexico, 1972  
PhD, George Washington University, 1978

Sayani, Hasan H.  
*Program Director, Software Engineering, and Computer Associate Professor*  
BSE, University of Michigan, 1965  
MSE, University of Michigan, 1966  
PhD, University of Michigan, 1973

Scanlan, Eugene A.  
*Adjunct Associate Professor*  
BA, Lafayette College, 1964  
MEd, University of New Hampshire, 1968  
PhD, Loyola University Chicago, 1972

Schmidt, Richard J.  
*Adjunct Professor*  
BS, University of Utah, 1961  
MBA, University of Utah, 1962  
PhD, Santa Clara University, 1979

Schmidt, Suzanne  
*Adjunct Assistant Professor*  
BA, Edinboro University of Pennsylvania, 1971  
MS, Slippery Rock University of Pennsylvania, 1975  
PhD, University of Pittsburgh, 1990

Schultz, Christopher  
*Adjunct Associate Professor*  
BA, State University of New York Regents College, 1989  
MA, Saint Louis University, 1990  
PhD, University of New Mexico, 1996  
MBA, University of Texas at Austin, 2000

Schuster, Richard L.  
*Adjunct Associate Professor*  
BA, Colgate University, 1971  
MS, Indiana University, 1973  
EdD, University of Georgia, 1990

SchWeber, Claudine  
*Associate Vice President, Office of Distance Education and Lifelong Learning, and Collegiate Professor*  
BA, Hunter College, City University of New York, 1968  
MA, State University of New York at Buffalo, 1970  
PhD, State University of New York at Buffalo, 1978

Seaver, Geoffrey W.  
*Adjunct Associate Professor*  
BS, University of Kansas, 1977  
MPA, San Diego State University, 1981  
MS, University of Southern California, 1982  
PhD, George Washington University, 1991

Segal, Scott H.  
*Adjunct Assistant Professor*  
BA, Emory University, 1986  
JD, University of Texas at Austin, 1989

Seiber, Marilyn J.  
*Adjunct Assistant Professor*  
BA, Michigan State University, 1967  
MA, American University, 1973  
PhD, American University, 1979

Sha, Bey-Ling  
*Adjunct Assistant Professor*  
BA, Purdue University at West Lafayette, 1993  
MA, University of Maryland, College Park, 1995  
PhD, University of Maryland, College Park, 1999

Shafer, Edward  
*Adjunct Professor*  
BA, Brooklyn College, 1956  
MBA, City College of New York, 1959  
DBA, George Washington University, 1980

Sharif, Nawaz  
*Program Director, Doctoral Programs, and Collegiate Professor*  
BS, East Pakistan University of Engineering and Technology, 1964  
MEA, George Washington University, 1967  
PhD, Texas A&M University, 1970

Sharma, Om P.  
*Adjunct Assistant Professor*  
PhD, Aga University (India), 1982

Shattuck, James M.  
*Adjunct Assistant Professor*  
BS, University of Maine, 1979  
MBA, University of Tampa, 1981

Shebalin, Paul V.  
*Adjunct Professor*  
BA, Old Dominion University, 1972  
MBA, University of Oklahoma, 1983  
MS, University of Virginia, 1989  
DSc, George Washington University, 1997

Sheehey, William J.  
*Adjunct Associate Professor*  
BSBA, Michigan State University, 1966  
JD, University of Michigan, 1969  
LLM, New York University, 1972

Sherlock, John  
*Adjunct Assistant Professor*  
BA, James Madison University, 1982  
MBA, University of Maryland, College Park, 1988  
EdD, George Washington University, 2000

Sherlock, Robert  
*Adjunct Associate Professor*  
BS, University of Utah, 1973  
JD, University of Utah, 1976  
MPA, University of Utah, 1985
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<tr>
<th>Name</th>
<th>Title</th>
<th>Degree Details</th>
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| Shihadi, Maurice M.   | Adjunct Assistant Professor | BA, Towson University, 1986  
                                | MA, California State University, Long Beach, 1996  
                                | EdD, Pepperdine University, 2001 |
| Shilesky, Donald      | Adjunct Assistant Professor | BS, University of Cincinnati, 1964  
                                | MS, University of Cincinnati, 1966  
                                | DSc, Washington University, 1973 |
| Shirazi, Joyce T.     | Program Director, Management Information Systems, and Collegiate Associate Professor | BS, Howard University, 1977  
                                | MS, University of Tennessee, 1988  
                                | PhD, George Washington University, 1994 |
| Shoukat, Michael M.   | Collegiate Associate Professor | BS, Memphis State University, 1982  
                                | MS, Air Force Institute of Technology, 1987  
                                | PhD, University of Missouri–Rolla, 1992 |
| Shreve, Richard R.    | Adjunct Associate Professor | BS, Western Illinois University, 1960  
                                | MS, Western Illinois University, 1962  
                                | MBA, Western New England College, 1965  
                                | PhD, Illinois Institute of Technology, 1978 |
| Sicotte, Hugues B.    | Adjunct Associate Professor | BS, McGill University (Canada), 1989  
                                | MA, Princeton University, 1991  
                                | PhD, Princeton University, 1995 |
| Siegal, Philip H.     | Adjunct Professor            | BS, Wilkes University, 1963  
                                | MBA, University of Cincinnati, 1965  
                                | DBA, University of Memphis, 1985 |
| Silard, Con D. Jr.    | Adjunct Assistant Professor | BSBA, American University, 1973  
                                | MS, University of Maryland University College, 2000 |
| Silberg, Carol A.     | Adjunct Assistant Professor | BS, University of Maryland, College Park, 1971  
                                | MS, Central Michigan University, 1980  
                                | PhD, University of Maryland, College Park, 1990 |
| Silverman, Paul B.    | Adjunct Assistant Professor | BS, City College, City University of New York, 1969  
                                | MS, Polytechnic Institute of Brooklyn, 1974 |
| Simmonds, Paul G.     | Adjunct Professor            | BS, George Washington University, 1974  
                                | MBA, Drexel University, 1977  
                                | PhD, Temple University, 1988 |
| Singer, Abe           | Adjunct Professor            | BEE, City College of New York, 1963  
                                | MS, University of Maryland, College Park, 1970  
                                | PhD, Johns Hopkins University, 1975 |
| Singer, Daniel        | Adjunct Associate Professor | BA, Rider College, 1964  
                                | MS, State University of New York at Albany, 1966  
                                | PhD, University of Colorado, 1971 |
| Singer, Marshall R.   | Adjunct Professor            | BA, Brooklyn College, 1955  
                                | MA, New School for Social Research, 1956  
                                | PhD, Massachusetts Institute of Technology, 1962 |
| Singh, Lisa O.        | Adjunct Assistant Professor | BS, Duke University, 1993  
                                | MS, Northwestern University, 1997  
                                | PhD, Northwestern University, 1999 |
| Sinha, Ashok K.       | Adjunct Assistant Professor | BS, Patna University (India), 1963  
                                | MS, Patna University (India), 1965  
                                | PhD, University of Maryland, College Park, 1971 |
| Smith, George S.      | Adjunct Professor            | BS, Ball State University, 1966  
                                | MBA, Michigan State University, 1970  
                                | PhD, University of Arkansas, 1978 |
| Smith, Linda L.       | Adjunct Assistant Professor | BS, University of Tennessee  
                                | MS, University of Tennessee  
                                | MA, Columbia University, 1994  
                                | EdD, Columbia University, 1995 |
| Smith, Robert S.      | Adjunct Assistant Professor | LLB, University of Edinburgh (Scotland), 1981  
                                | LP, University of Edinburgh (Scotland), 1982  
                                | LLM, University of Virginia, 1986 |
| Smith, Walter P.      | Adjunct Associate Professor | BS, Ohio State University, 1988  
                                | BA, Marietta College, 1992  
                                | PhD, Ohio State University, 1998 |
| Snow, Fredrick R.     | Adjunct Assistant Professor | BA, Grove City College, 1982  
                                | MBA, Pennsylvania State University, 1992  
                                | PhD, Kent State University, 1996 |
| Snyder, Deborah       | Adjunct Professor            | PhD, Wayne State University, 2001 |
| Spatz, Marshall C.    | Adjunct Associate Professor | BS, Brandeis University, 1966  
                                | MA, Harvard University, 1967  
                                | PhD, University of Chicago, 1975  
                                | MPD, Yale University, 1980 |
| Spilman, Mary Ann     | Director, Executive Management Programs, and Collegiate Professor | BA, Rutgers University, 1974  
                                | PhD, Rutgers University, 1983  
                                | MIM, University of Maryland University College, 1997 |
| Spivack, Richard N.   | Adjunct Associate Professor | BA, American University, 1971  
                                | MA, University of Rhode Island, 1973  
                                | PhD, University of Connecticut, 1984 |
Squires, Katherine  
*Adjunct Professor*  
BA, Clark University, 1980  
MDiv, Talbot School of Theology, 1996  
JD, University of Dayton, 1982  
LLM, Georgetown University, 1983

Staley, Blair  
*Adjunct Associate Professor*  
BA, Western Connecticut State University, 1984  
MPA, University of Texas, 1987  
DBA, New Southern University, 1997  
MS, American University, 2003

Stanbury, John  
*Adjunct Associate Professor*  
BA, St. Mary’s University, 1973  
MBA, Concordia University, 1982  
MA, Ohio State University, 1991  
PhD, Ohio State University, 1992

Steinheiser, Frederick H.  
*Adjunct Assistant Professor*  
BA, University of Michigan, 1966  
MA, University of Cincinnati, 1969  
PhD, University of Cincinnati, 1970

Stevens, David W.  
*Adjunct Assistant Professor*  
BS, Virginia Polytechnic Institute and State University, 1957  
MS, Virginia Polytechnic Institute and State University, 1959  
MBA, Wharton School of Business, University of Pennsylvania, 1963

Stewart, Helene E.  
*Adjunct Professor*  
BA, Wittenberg University, 1975  
MS, Georgetown University, 1978  
PhD, Georgetown University, 1980  
MA, Marymount University, 1986

Stewart, James J.  
*Program Director, Master of Business Administration, and Collegiate Professor*  
DSc, George Washington University, 1988

Stone, Theodore E.  
*Adjunct Associate Professor*  
BA, University of Maryland, College Park, 1976  
MA, University of Maryland, College Park, 1988  
PhD, University of Maryland, College Park, 1991

Stover, Mary Liana  
*Adjunct Professor*  
BA, Kansas State University Manhattan, 1970  
MA, University of Hawaii at Manoa, 1980  
MA, University of Hawaii at Manoa, 1983  
PhD, University of Hawaii at Manoa, 1990

Sturm, Philip R.  
*Adjunct Associate Professor*  
BS, Murray State University, 1970  
MBA, Murray State University, 1971  
PhD, Virginia Commonwealth University, 1998

Sultan, Peter L.  
*Adjunct Assistant Professor*  
BS, London School of Economics and Political Science (England), 1978  
JD, Boston University, 1983

Sutherland, Alan R.  
*Collegiate Associate Professor*  
BFA, Pratt Institute, 1964  
PhD, New York University, 1984

Sweeney, Michael  
*Adjunct Associate Professor*  
BA, Aquinas College, 1975  
BS, Aquinas College, 1975  
MBA, University of Detroit, 1977  
PhD, University of Kentucky, 1994

Swift, Bert H.  
*Adjunct Professor*  
BA, University of California, Santa Barbara, 1958  
MPA, University of Washington, 1964  
PhD, University of Washington, 1972

Tenenbaum, Jacob E.  
*Adjunct Professor*  
BS, University of Pittsburgh, 1969  
MPH, University of Pittsburgh, 1973  
PPA, Nova University, 1984

Terrell, Sharron L.  
*Adjunct Associate Professor*  
BA, Marygrove College, 1988  
MA, University of Notre Dame, 1986  
PhD, University of Notre Dame, 1993

Terwilliger, Thom  
*Adjunct Associate Professor*  
BS, Christopher Newport College 1983  
MBA, Golden Gate University, 1983  
EdD, College of William and Mary, 1992

Thayer, Richard  
*Adjunct Professor*  
BA, Mary Immaculate Seminary and College, 1958  
PhD, Saint Louis University, 1966

Thies, Paul R.  
*Adjunct Assistant Professor*  
BS, University of Missouri, 1970  
MS, Utah State University, 1973  
PhD, University of Wisconsin–Madison, 1987

Thompson, Charles R.  
*Adjunct Associate Professor*  
BS, University of Nevada, 1974  
MS, Catholic University of America, 1979  
PhD, American University, 1988

Thorpe, Gerald L.  
*Adjunct Professor*  
BA, Wayne State University, 1961  
MAT, Harvard University, 1962  
PhD, Wayne State University, 1974

Tillery-Larkin, Rochelle  
*Adjunct Assistant Professor*  
BA, Howard University, 1993  
MA, University of Maryland, College Park, 1995  
PhD, Southern Illinois University, 1999

Tofanelli, Dave E.  
*Adjunct Assistant Professor*  
BA, Our Lady of the Lake University, 1979  
MBA, Golden Gate University, 1983  
MS, University of Denver, 1992

Toplin, Marc B.  
*Adjunct Associate Professor*  
BA, Temple University, 1975  
MA, University of Maryland, College Park, 1977  
MBA, American University, 1986
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<tr>
<td>Trondtip, Tom L.</td>
<td>Adjunct Professor</td>
<td>BBA, University of Central Oklahoma, 1973</td>
<td>BS, Oklahoma Baptist University, 1975</td>
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<td>MEd, University of Central Oklahoma, 1977</td>
<td>PhD, University of Oklahoma, 1985</td>
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<td>Tsai, Henry W. H.</td>
<td>Adjunct Associate Professor</td>
<td>BS, National Chung-Hsing University (Taiwan), 1973</td>
<td>MS, National Taiwan University (Taiwan), 1975</td>
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<td>PhD, University of Maryland, College Park, 1985</td>
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<td>Tumarkin, Joel</td>
<td>Adjunct Professor</td>
<td>BME, New York University, 1956</td>
<td>MIE, New York University, 1963</td>
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<td>PhD, George Washington University, 1968</td>
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<td>Turner, Marvin W.</td>
<td>Adjunct Associate Professor</td>
<td>BBA, Howard University, 1981</td>
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<td>Uheroi, Vikas</td>
<td>Adjunct Assistant Professor</td>
<td>BT, Banaras Hindu University (India), 1991</td>
<td>DSc, Tulane University, 1996</td>
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<td>MBA, University of Navarra (Spain), 2002</td>
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<td>Udas, Ken</td>
<td>Adjunct Associate Professor</td>
<td>BS, University of Massachusetts Dartmouth, 1986</td>
<td>MS, Texas A&amp;M University, 1992</td>
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<td>PhD, Texas A&amp;M University, 1995</td>
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<td>Usilner, Brian</td>
<td>Collegiate Professor</td>
<td>BS, New York University, 1962</td>
<td>MS, New York University, 1963</td>
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<td>DSc, George Washington University, 1971</td>
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<tr>
<td>Van der Veer, Gretchen</td>
<td>Adjunct Assistant Professor</td>
<td>BA, University of Cincinnati, 1980</td>
<td>MEd, University of Vermont, 1982</td>
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<td>Van Ornam, Donald C.</td>
<td>Adjunct Associate Professor</td>
<td>BA, LaSierra College, 1958</td>
<td>MS, University of California, Los Angeles, 1966</td>
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<td></td>
<td>PhD, Peter Drucker Graduate School of Management, Claremont Graduate University, 1995</td>
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<td>Vazquez, Federico</td>
<td>Adjunct Associate Professor</td>
<td>PhD, George Washington University, 1998</td>
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<td>Versace, Stephen V.</td>
<td>Collegiate Professor</td>
<td>BA, University of Maryland, College Park, 1970</td>
<td>MS, Central Missouri State University, 1972</td>
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<td>PhD, University of Maryland, College Park, 1978</td>
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<td>Vikas, Shree</td>
<td>Adjunct Associate Professor</td>
<td>BS, Indian School of Mines (India), 1989</td>
<td>MEng, Pennsylvania State University, 1996</td>
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<td>PhD, Pennsylvania State University, 1996</td>
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<td>Vitro, Robert</td>
<td>Adjunct Associate Professor</td>
<td>BS, Clarkson University, 1966</td>
<td>MBA, Samuel Curtis Johnson School of Management, Cornell University, 1970</td>
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<td>Volpe, John M.</td>
<td>Adjunct Professor</td>
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<td>PhD, University of Belgrade (Yugoslavia), 1990</td>
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