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Message From the Dean

Dear Members of the UMUC Community:

Welcome to the 2000–2001 academic year at UMUC. This *Catalog* provides up-to-date information about the Graduate School's program and course offerings, student services, academic policies, tuition and fees, and faculty. We hope this will prove a valuable resource for you.

This year promises to be an eventful one with the fall 2000 official inauguration of President Gerald Heeger and the launching of several new degree and certificate programs in the Graduate School. We are excited about beginning our first class in the Doctor of Management program. If you are interested in a technology-related degree, we have new master's programs in E-Commerce and Information Technology. For those of you wishing to further your personal and professional goals without committing to a full degree, we are introducing 32 new graduate certificates.

You will now be able to choose from among 11 master's degrees, all of which are offered online via UMUC's virtual classroom software, WebTycho. Most are also offered in a face-to-face format at various sites throughout Maryland. In three of these degree areas, it is also possible to obtain an MBA if you successfully complete an additional 18–24 credits. Three of these master's degrees are also offered in executive format for those of you who prefer an accelerated, cohort program delivered partly online and partly "on the ground." As you can see, we are committed to providing you a variety of quality educational opportunities from which to choose.

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



Christina Hannah, Ph.D.
*Dean, Graduate Studies and
Associate Vice President, Academic Affairs*

Welcome to University of Maryland University College

Introduction

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

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

Forbes magazine ranks UMUC in the “Top 20 Cyber Universities.” In addition, UMUC received the University Continuing Education Association–Peterson’s Award for Innovative Distance Education in 1998 and 1999. Also, UMUC has been selected as one of 15 participants in the U.S. Department of Education’s Distance Education Demonstration Program.

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

UMUC conducts postsecondary programs for military servicemembers and for U.S. government employees and their families through its Asian and European divisions. A two-year residential campus in Mannheim, Germany, serves the sons and daughters of U.S. military and government personnel stationed abroad. Also, military personnel can earn their degree from anywhere in the world through distance education. At its residential campus in Schwäbisch Gmünd, Germany, UMUC provides an interna-

tional undergraduate education to students from the United States and dozens of other countries. Russian students may earn a UMUC bachelor’s degree through programs offered jointly at Far Eastern State University in Vladivostok and Irkutsk State University in Irkutsk.

UMUC is unlike any other institution of higher education in the world. It is preeminent in its offering of higher educational opportunities for adults in the United States. In spring 2000, UMUC enrolled nearly 35,000 students worldwide; annually, it serves nearly 70,000 students. More than 5,600 academic degrees were awarded in the past year. Every year, UMUC holds commencement ceremonies in College Park, Heidelberg, Tokyo, Okinawa, Seoul, Schwäbisch Gmünd, Irkutsk, and Vladivostok.

History and Scope

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

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

UMUC cooperates with its sister institutions to extend educational opportunities throughout Maryland,

administering the University System of Maryland Shady Grove Center in Rockville, the College of Southern Maryland (CSM)–UMUC Waldorf Center, and the UMUC Annapolis Center. UMUC also conducts classes at more than 20 additional sites in the region and offers popular distance learning courses, using online instruction and other methods, in Maryland and around the globe.

UMUC is known for its commitment to excellence in both credit and noncredit programs. Undergraduate degree students may choose a primary specialization from among 30 academic subjects and may take advantage of UMUC's innovative approaches to learning experiences, such as distance education, interdisciplinary programs, cooperative education, and documentation of prior experiential learning. Starting fall 2000, the Graduate School offers the new Doctor of Management program, and has admitted its first class to the program. UMUC confers master's degrees in 11 areas of management and technology with 19 specialty tracks, four dual degrees, and more than 30 certificates. Three degree programs are also offered in an accelerated format: the Executive Master of Business Administration, the Executive Master of Science in Technology Management, and an Executive Program in Information Technology. The Office of Executive Programs also offers three certificates: the Executive Certificate in International Business, the Executive Certificate for Chief Information Officers (CIO), and the Executive Certificate in the Strategic Management of Technology and Innovation.

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

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

**UMUC has not moved, but its address has changed from College Park to Adelphi, Maryland.*

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

***College Park Commencement Date:
Saturday, May 19, 2001***

The Graduate School

Managing Technology for Today and Tomorrow

More than 5,600 students are actively pursuing their graduate studies at UMUC's Graduate School—a remarkable growth since the school's opening in 1978. UMUC extends the resources of the University System of Maryland to students employed throughout Maryland, the District of Columbia, Northern Virginia, the nation, and the world. Courses are offered during evening and weekend hours at locations that accommodate students' career and family commitments. Students taking online courses are not limited to UMUC's traditional face-to-face classes. Rather, they can pursue their studies when and where they choose.

Mission Statement

The Graduate School provides postbaccalaureate education to members of the private, public, and not-for-profit sectors who seek to enhance their competencies in management and technology. Our goal is to prepare students to become managers with the vision, knowledge, and skills necessary to help lead organizations in a global environment characterized by workforce diversity, increasing competition, and advanced technology.

We strive for educational leadership in the quality of programs we offer and in their delivery. The Graduate School's role is that of a catalyst for individuals who will make our state, nation, and global society a better place in which to work and live.

The Graduate School serves the Baltimore–Washington region and the state of Maryland, as well as other areas of the nation and the world. Where appropriate, the Graduate School enters into alliances with other institutions within and outside the University System of Maryland to achieve its educational goals.

Student Profile

Approximately 75 percent of the Graduate School's students have completed non-business-related studies such as engineering, computer science, biological and medical science, or social science. Most of the Graduate School's students are

mid-career professionals who have made steady progress in their chosen fields. These students are now at the point where they desire additional preparation in anticipation of a new managerial assignment. The purpose of UMUC's varied graduate degree programs is to provide students with an opportunity to fully develop themselves as managers so they can confidently accept a more challenging role within their organizations.

The average student age is 36 years. Nearly 60 percent of the students are employed in the private sector of the economy, and more than 52 percent are women. Approximately 8 percent of all applicants to the Graduate School hold prior graduate degrees.

UMUC's goal is to prepare students to become managers with the vision, knowledge, and skills necessary to help lead organizations in a global environment characterized by workforce diversity, increasing competition, and advanced technology.

Graduate Programs

UMUC's Graduate School offers the following graduate programs:

Doctor of Management (accepting applications for Fall 2001)

- Organizational Processes
- International Operations
- Technology and Information Systems

Master of Business Administration (*online and executive format*)

Master of Science in Management/Master of Business Administration*

Master of Distance Education (*online only*)

Master of International Management*

Specialty Tracks

- International Commerce*
- International Finance*
- International Marketing*

Master of International Management*/Master of Business Administration*

Master of Science in Computer Systems Management

Specialty Tracks

- Applied Computer Systems*
- Database Systems and Security*
- Information Resources Management*
- Software Development Management*

Master of Science in Environmental Management*

Master of Science in Electronic Commerce (E-Commerce)
(*pending approval*)

Master of Science in Information Technology

Master of Science in Management*

Specialty Tracks

- Accounting*
- Financial Management*
- Health Care Administration*
- Human Resource Management*
- Interdisciplinary Studies in Management*
- Management Information Systems*
- Marketing*
- Not-for-Profit Management*
- Procurement and Contract Management*

Master of Science in Technology Management*

- General Program*

Specialty Tracks

- Biotechnology Management*
- Technology Systems Management*

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

Master of Science in Telecommunications Management*

Master of Software Engineering*

Executive Management Programs

- Executive Master of Business Administration
- Executive Master of Science in Technology Management
- Executive Program in Information Technology**
- Executive Certificate in International Business
- Executive Certificate for Chief Information Officers (CIO)
- Executive Certificate in the Strategic Management of Technology and Innovation

* Offered in both the traditional setting and online.

** Executive Master of Science in Information Technology
(*pending approval.*)

Institute for Environmental Management

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

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

Institute for Global Management

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

Students may obtain further information from the director of the Institute for Global Management by phone at 301-985-7029 or by e-mail at cmann@umuc.edu.

Professional and Workforce Development Program

Graduate School faculty collaborate with clients to design flexible products and programs that target key business objectives. Current program topics are offered in four management areas: interdisciplinary, environmental, international, and technology.

The Professional and Workforce Development office offers customized noncredit executive training programs for Maryland's professional workforce. Training programs may be structured to meet organizational objectives. The prices of the customized courses vary depending on the complexity of the subject and the desired delivery method. A partial list of the topics that may be offered is as follows:

IT Certification Programs

- MCSE (Windows NT) Certification
- A+ Certification

- Lotus Notes Certification
- Visual Basic
- Certified Novell Engineer Certification
- Capability Maturity Model Training
- Oracle

Developer 2000

Short Courses/Workshops

- Accounting and Tax Programs
- Environmental and Health and Safety Management

Federal and State Tax Institute Seminars

Test Preparation Workshops

- GRE, GMAT, and LSAT Preparation Courses

Online Language Courses

- French in Action

Customized Programs

- Accounting/Finance
- Communication Skills, Business Writing, and Speech Writing
- Emergency Management
- Environmental Management
- Health and Safety Management
- Management Skills
- Performance Improvement Management
- Project Management
- Sales and Marketing Management
- Strategic Planning
- Team Building

For more information, call Professional and Workforce Development at 301-985-7644, or send an e-mail to UMUC-at-WORK@nova.umuc.edu or gradschool@info.umuc.edu.

Federal GSA 1,000 By the Year 2000 Program

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

To complete the program, students must take three courses and one elective in the Master of Science in Computer Systems Management Information Resources Management (IRM) track. Two other electives are to be selected from a variety of technical and technical-management courses in the Master of Science in Computer Systems Management or Master of Science in Telecommunications Management programs, or the Master of Science in Management, Management Information Systems track. Upon completion of their studies, students receive a document of completion from UMUC; federal employees may also receive a *1,000 by the Year 2000* certificate from GSA. Students may elect to finish their Master of Science in

Computer Systems Management degree by completing 18 more credits. Students interested in this opportunity should call a Master of Science in Computer Systems Management advisor for further details at 301-985-4616.

Partnership with National Defense University

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

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

Agreement with U.S. Chamber of Commerce Institutes for Organization Management

In 1999, the UMUC Graduate School and the U.S. Chamber of Commerce Institutes for Organization Management agreed to provide extended academic opportunities to Institute students. The Institute offers professional development programs for association executives and a certificate in Association Management for participants who successfully complete the program.

UMUC will accept the successful completion of designated Institute courses as partial fulfillment of four Graduate School courses in its Master of Science in Management degree program, Not-for-Profit track. Students must apply to and meet the established admission guidelines for the Master of Science in Management program and submit a portfolio, which will be evaluated by the Graduate School, to receive credit for the four courses.

Office of Distance Education and Lifelong Learning

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

ment in Higher Education (IRAHE), and the Institute for Distance Education (IDE) are listed below.

Center for Teaching, Learning, and Assessment

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

Institute for Distance Education

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

Institute for Research and Assessment in Higher Education

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

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

National Leadership Institute

The National Leadership Institute (NLI) offers a wide range of 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.

A licensee of the Center for Creative Leadership, NLI has conducted leadership training programs to thousands of managers and executives since 1979. Additionally, the National Leadership Institute provides high-quality customized programs to private- and public-sector organizations to enhance the managerial skills of their leaders. More information about NLI is available by calling 301-985-7195 or by sending an e-mail to kloster@umuc.edu. Information can also be obtained by visiting NLI's Web site at www.umuc.edu/prog/nli/nli.html.

Career and Cooperative Education Center

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

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

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

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

Undergraduate Programs

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

Professional Education Program

The Professional Education Program (PEP) is charged with the production and delivery of professional education: nondegree instructional programs and services which meet the workplace-related education needs of adult learners in a variety of career fields and which fulfill the organizational training and education requirements of the employer community.

PEP serves three target audiences inside and outside the workplace: through contracts and partnerships with employer organizations—corporate, government, and nonprofits—PEP emphasizes the delivery of instruction to cohorts of learners; at the worksite or through second-party hosts, such as professional associations, PEP conducts market-feasible programs for individual subscriber customers; and PEP seeks opportunities for joint-program ventures with universities and colleges, especially overseas, to serve their students.

PEP's direction and practices reflect the following core values: satisfying learners' immediate and practical professional needs; monitoring workplace professional trends to assure cutting-edge relevance; quickly delivering instructional experiences on demand; being accountable to clients for predetermined results; developing offerings based on the program strengths of UMUC's graduate and undergraduate units, University System of Maryland institutions, and other professional sources; and serving clients and customers throughout the world.

PEP's programs are in four series: General Management, Human Resource Management, E-Commerce, and Information Technology Certification. Nearly all courses are in the face-to-face classroom format. As noted below, some courses are online, with others to be converted to this format during 2000–2001.

General Management

PEP provides intensive training courses to develop managers in critical skill areas. Most courses are conducted face-to-face, and range from two to three days in length. They are offered on a subscription basis in fall 2000 and spring 2001. Also, they can be adapted for delivery in an organization's inhouse training program. The courses include:

- Finance for Non-financial Managers
- Strategic Planning
- Managing Global Project Risks
- Knowledge Management
- Project Management
- Project Management Certificate (online)

Human Resource Management

In partnership with the Society for Human Resource Management (SHRM), PEP offers a series of courses for an organization's human resource managers and specialists. The core course is for those preparing to take SHRM's Professional in Human Resources (PHR) or Senior Professional in Human Resources (SPHR) certification examinations. The advanced courses are instrumental in satisfying SHRM's recertification requirements. The courses consist of:

- Human Resource Professional Certification Preparation Program (online)
- Strategic Planning for Human Resource Managers
- International Human Resource Practices
- Federal Sector Human Resource Management

E-Commerce Business

PEP provides intensive training courses to develop managers and specialists who are transitioning an organization's core competencies to an e-commerce environment. The courses are conducted face-to-face, for two to three days. They are offered on a subscription basis, and can be adapted for an organization's inhouse training program. The courses include:

- Strategies for E-Commerce
- E-Marketing
- E-Operations: Logistics and Supply Chain Management
- E-Finance

Information Technology Certification

PEP offers a variety of information technology (IT) certification programs for adults who are seeking to advance their IT workplace expertise. The on-site programs are held in Rockville, MD, and Washington, D.C., and can be adapted for delivery at an organization. Lasting from four to 23 weeks, the courses consist of:

- MCSD
- MCSE (online)
- Oracle Developer
- Oracle Database Administrator
- A+ Certified Technician
- Network+ Certified Technician
- Cisco CCNA

For further information on PEP courses, call 301-985-7644, or visit the PEP Web site at www.umuc.edu/workforce/inst.html.

Oldenburg University

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

Graduate Certificate Programs

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

The admission process is the same for the certificate programs as it is for the degree programs. Please call Graduate Services at 301-985-7155 or 800-283-6832, ext. 7155, for assistance with the admission process, or send an e-mail to certificates@umuc.edu.

Library Services

Information and Library Services (ILS) provides access to library resources, services, and instruction to local and distant learners. UMUC reference librarians are located at the UMUC Student and Faculty Services Center, McKeldin Library on the College Park campus, and at the University System of Maryland (USM) Shady Grove Library/Media Center.

Currently enrolled Graduate School students have borrowing privileges at all University System of Maryland libraries, Morgan State University, and St. Mary's College of Maryland. To borrow materials, students must have a current validation sticker and barcode on their student identification card.

VICTORWeb, the USM Web-based library catalog, provides online access to USM books. Books can be delivered to any system library as well as to the Annapolis and Waldorf Centers. Students living outside the state of Maryland, but inside the United States may use the library's book delivery program to have books from the USM delivered to their homes. The text-based version of the library catalog, VICTOR, can be accessed through remote dial-in using a PC and modem. The library also offers access to more than 65 journal and newspaper databases through the Maryland University System Access to Library Databases (MdUSA), many of which provide full-text articles covering all academic disciplines, including business, management, and computer science. Both VICTORWeb and the MdUSA databases are available from the ILS Web site at www.umuc.edu/library.

Students must be registered in the library system to place a hold on a book in VICTORWeb or use the MdUSA databases through the ILS Web site. All graduate students who are registered for courses at UMUC are eligible to use the library resources and services. A student who is not recognized by the system should contact the library or register using an online form available from the Web site. While UMUC has a rapidly expanding virtual library, access to a local university or college library is strongly recommended. For more information, students can call 301-985-7209 or send an e-mail directly to library@umuc.edu.

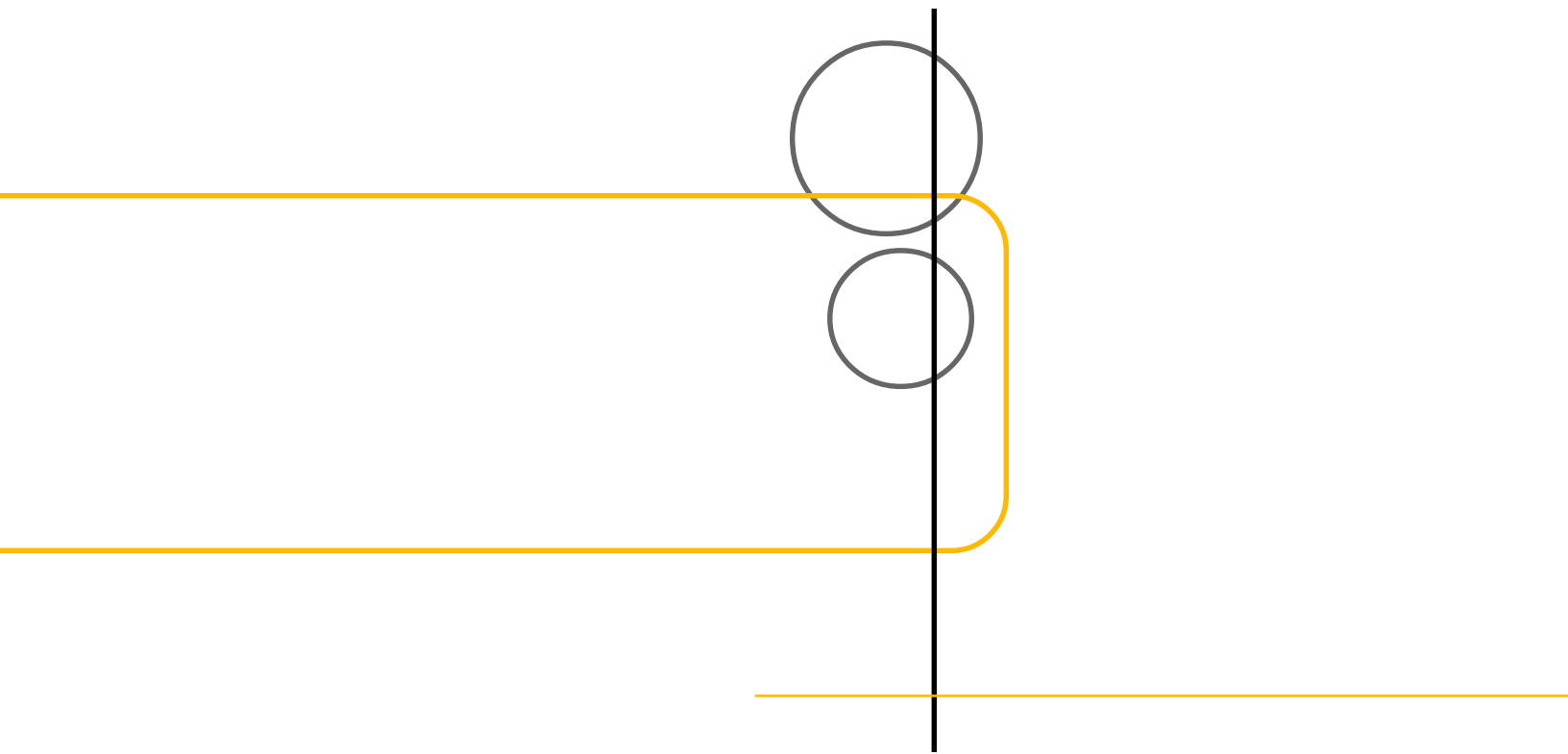
Military Outreach

Military Outreach, a separate division of Global Outreach, is responsible for the "passport" initiative to retain current servicemember students, especially those transitioning from the Asian and European operations. It also accelerates marketing to service members throughout the United States. Please call 301-985-7721 for further information.

Regional Outreach

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

Policies and Procedures



Tuition and Fees

All graduate students are required to pay graduate tuition for all graduate courses in which they are enrolled.

Standard Master's Degree Programs

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

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

Note: Tuition for active-duty military and their spouses is the same as tuition for Maryland residents. Dependent children of full-time, active-duty members of the U.S. Armed Forces who reside in or are stationed in Maryland have in-state status.

Executive Graduate Programs

A nonrefundable fee of \$50 is due when a student applies for admission to the Graduate School. A deposit of \$500 is due upon acceptance into an executive program of study.

Executive Program Tuition

Executive Master of Business Administration (7 seminars, 42 credits)	\$4,650 per seminar \$32,550 full program
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Executive Master of Science in Technology Management (4 seminars, 36 credits)	\$5,274 per seminar \$21,096 full program
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Executive Master's Program in Information Technology (4 seminars, 36 credits)	\$6,075 per seminar \$24,300 full program
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Executive Certificate in International Business (3 seminars, 15 credits)	\$3,850 Seminar I \$4,650 Seminars II and III \$13,150 full program
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Executive Certificate for Chief Information Officers (CIO) (3 seminars, 24 credits)	\$5,250 Seminars I and II \$3,500 Seminar III \$14,000 full program
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Executive Certificate in the Strategic Management of Technology and Innovation (1 seminar, 12 credits)	\$6,600 full program
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For dual degrees offered through Executive Programs, contact the Office of Executive Programs at 301-985-7035 or visit www.umuc.edu/gsmi/execprogs.html.

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

Doctor of Management

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

Tuition for the DM program varies according to the level of the coursework in which the student is enrolled. DM students enrolled in courses at the "600" level (courses that are open to both doctoral and master's students) pay the prevailing graduate tuition rate for those courses (see www.umuc.edu/tuition for current tuition information). Tuition for the doctoral seminars, which are the "700" level (open only to doctoral students), is at a fixed rate of \$750 per credit hour.

Other Fees

Other fees applicable to UMUC students are (1) schedule adjustment (\$15), withdrawal (\$15), and late registration (\$30); and (2) regular transcript service (\$5), rush transcript service (\$8), and replacement ID card (\$10). For elective or prerequisite courses taken at other institutions, students will pay tuition in accordance with the amount charged by the institution in which these courses are offered.

Monthly Tuition Payment Plan

Beginning fall 2000, UMUC will offer a new, cost-effective alternative for students who are budgeting for college tuition: an interest-free, monthly tuition-payment plan. The new plan will allow students to spread all or part of their tuition bills into monthly installments on a semester basis. This new payment plan offers students greater financial flexibility. All UMUC students are eligible to participate in the payment plan, regardless of financial need. For more information, visit the Web site at www.amsweb.com or call Academic Management Services (AMS) at 800-635-0120.

Tuition Remission

The current USM Tuition Remission policy allows a student to take 7 credits per semester. Students enrolled in a program that schedules two seminars for the same enrollment period are responsible for credits which exceed the 7-credit limit.

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

Refund Policy

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

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.

Graduate Student Financial Aid Programs

Federal

Federal Perkins Loan

- Interest rate – 5 percent
- Eligibility – Degree-seeking students
- Amounts – Variable
- Determination – Based on financial need and available funding
- Application – FAFSA* and UMUC application material

William D. Ford Federal Direct Loan Program

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

State

Senatorial Scholarship Program

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

Delegate Scholarship Program

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

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

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:

- 100% if class is dropped before the first class meeting
- 75% if class is dropped before the second class meeting
- 50% if class is dropped before the third class meeting
- 25% if class is dropped before the fourth class meeting
- 0% if class is dropped the day of or after the fourth class meeting

The application and change in registration fees are not refundable. A \$15 withdrawal processing fee is deducted from the 100 percent refund. The official date used to determine a refund is either the date the withdrawal form is hand-delivered to the Information Desk at the SFSC, the date and time of the e-mail to gradinfo@umuc.edu,

or the postmark date on a mailed request. Business hours are Monday through Friday, from 8:30 a.m. to 5 p.m.

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

Academic Calendar

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

Approximate Class Schedule

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

Actual times, dates, and locations may be found in the Graduate *Schedule of Classes*, which is published each semester and is available by calling 301-985-4617, sending a fax to 301-985-7544, sending an e-mail to gradschool@info.umuc.edu, or visiting online at www.umuc.edu/studserv/impdates.html.

Services for Disabled Students

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

Financial Aid

The Graduate Financial Aid Office administers a variety of financial assistance programs—including loans, work-study, scholarships, and grants—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 Graduate 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.

UMUC students must apply for aid through UMUC, not through any other office or institution of the University System of Maryland. Students must reapply for financial aid at each school attended.

General Eligibility Requirements

Eligible applicants for UMUC need based-assistance must:

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

Students who have attended another college or other post-secondary school during the current award year must arrange for the prior institution to send a Financial Aid Transcript (FAT) to UMUC, even if no financial aid was received at the prior institution.

U.S. Federal Financial Aid Programs

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

Amounts and eligibility for financial aid vary from year to year. Following is a brief description of amounts likely to be available for the 2000–2001 award year.

Grants and Scholarships

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

The **UMUC President's Grant program** offers grant awards to students who demonstrate financial need. Typical awards during the 2000–2001 year range from \$100 to \$600 per semester, based on need. Since funds are limited, students are urged to apply early.

The **UMUC Scholarship programs**, which include the UMUC President's Scholarship, offer a number of institutional scholarships

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

The **Maryland Senatorial and Delegate Scholarship Programs** provide financial assistance to Maryland residents are based on criteria established by the elected official. For graduate students, awards typically require enrollment in at least 6 credits per semester. Award amounts range from \$200 to \$3000 annually. For more information, please contact the Maryland State Scholarship Administration at 401-974-5370.

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

Loans

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

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

The **William D. Ford Federal Direct and FFEL Stafford Loan programs** offer low interest federal loans to students. Students may qualify for a subsidized Federal Direct or FFEL Stafford Loan, which is based on financial need. Students can also borrow an unsubsidized Federal Direct or FFEL Stafford Loan which is not based on need—that is, regardless of personal or family income level. The federal government pays the interest on need-based Federal Direct Loans, while the borrower is in school or a deferment status. Students with an unsubsidized Federal Direct Loan (not based on need) are responsible for the interest during in-school and deferment periods. The interest rate is variable, but will not exceed 8.25 percent. Interest rates are set each year in June. Loan amounts vary based on grade level and dependency status. Repayment begins six months after you leave school or when your attendance drops below half time. For annual award amounts and general repayment terms please 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 from private student loan programs offered by banks and other lenders. These education loans are not federal loans; students borrow directly from and make payments to the lender. Alternative student loans typically require a credit check, and often a cosigner. Students are generally required to be enrolled in 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 mailed directly to the borrower. There are many lenders who offer alternative student loans. Students who are interested in borrowing an alternative student loan should contact the bank of their choice, or for more information visit UMUC's web site on alternative student loans at www.umuc.edu/prog/gsm/finaid.html.

Employment Programs for Students

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

The **UMUC Student Assistants Program** is an opportunity for UMUC students to obtain part-time employment with UMUC, which offers a flexible schedule around the student's classes. Please contact the Financial Aid Office for more information on the opportunities available.

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

Completing the Financial Aid Application Forms

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

UMUC Financial Aid Priority Deadlines

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

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

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

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

Federal Return of Funds Policy

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

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

Calculation for the percentage of semester the student attended is:

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

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

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

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

$$\begin{aligned} &\text{Amount of Unearned Title IV Aid} \\ &\text{Minus (-) Amount of Aid School Returns} \\ &= \text{Amount Student returns} \end{aligned}$$

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

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

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

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

UMUC Graduate Financial Aid Satisfactory Academic Progress Standards

The financial aid satisfactory academic progress policy includes both a qualitative measure (cumulative grade point average) and a quantitative measure (maximum time frame for completion of program). To demonstrate a satisfactory grade point average, a graduate student receiving financial aid is required to maintain a 3.00 cumulative grade point average each period of enrollment. To maintain a satisfactory completion rate, a graduate student must complete a specific minimum number of attempted credits each year. The chart that follows displays the year of program, the minimum number of credits that must be completed each year based on specific enrollment level and the cumulative number of credits that must be completed based upon the year of program, and enrollment level.

Maximum Time Frame-Based on Half-Time Enrollment

Year	1	2	3	4	5
Hours Attempted	12	12	12	12	10
Hours Earned	8	8	8	8	7
Cumulative	8	16	24	32	39
GPA	3.0	3.0	3.0	3.0	3.0

A student is allowed to receive federal financial aid for only one repetition of a course completed with an "I" or "W." Federal financial aid is not awarded for courses taken with the audit option.

To determine whether satisfactory academic progress is being made, each student's grade record is reviewed annually.

A student on Academic Jeopardy is also on financial aid probation.

For Further Information

Information and applications are available from Graduate Services. All financial aid information and forms are also available on UMUC's Web site at www.umuc.edu/prog/sgmt/finaid html. Students with additional questions should contact Graduate Services directly at 301-985-7155 or e-mail gradschool@info.umuc.edu.

Veterans Benefits

Graduate students who are eligible for Department of Veterans Affairs (DVA) educational benefits should contact Graduate Services each semester to initiate or continue their benefits. The amount of DVA monthly benefits a student receives varies with the different educational assistance programs. Full- or part-time status is determined by using the following tables.

Table for Computing Graduate Units

Level of Course Units Allowed

000–399	2	units per credit
400–499	4	units per credit
500–599	5	units per credit
600–898	6	units per credit
799 (research)	12	units per credit
899 (research)	18	units per credit

Conversion Table for Training Time

Graduate Units	Status
48	Full-time
36	3/4-time
24	1/2-time
12	1/4-time

Training time for a graduate student enrolled in a 3-semester-hour course is greater than quarter-time and less than half-time. Chapter 30 graduate students receive a half-time monthly benefit rate, not to exceed tuition and fees. Chapter 1606, 35, and 32 students receive the quarter-time monthly benefit rate. Training time during the summer semesters varies depending on the length of the course(s). Graduate students may not receive benefits for any course below the 400 level unless it is required by their department and a letter so stating is approved by the academic department and submitted to the Graduate Services office at registration. Noncredit courses are not eligible for benefits. Audited courses cannot be counted toward credit for graduate students, and benefits are not allowed. Charges for audit and credit courses are the same. Students may contact Graduate Services at 301-985-7155 or by e-mail at gradinfo@umuc.edu for further information.

Rules and Regulations

Unless specifically noted, the general academic policies of UMUC apply.

Attendance

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

Students who are absent from class retain responsibility for completing any missed coursework, as indicated in the course outline.

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

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

Academic Jeopardy

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

Please refer to page 21 for additional details on the grade of “C”.

Doctor of Management Students

Students in the Doctor of Management (DM) program are expected to earn a minimum grade of “B” or “S” in every course attempted. This includes any coursework at the “600” level (courses open to both master’s and doctoral students) used to fulfill DM requirements. For purposes of the DM program, both “B” and “S” are understood to be equivalent to 3.0 on a 4.0 scale. A DM student who receives a grade of “C” in a course must repeat that course and earn a “B” or better. This option to repeat a course may be exercised only once (“one-repeat”). A DM student who receives a second “C,” or who receives a grade of “F” or “U” in any course, will be academically dismissed from the DM program.

Notwithstanding, the “one-repeat” option described above, a DM student who receives a grade of “C” or lower in either of the two doctoral core seminars is subject to immediate academic dismissal from the program.

A Second Graduate Degree

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

Students interested in pursuing a second graduate degree should contact the program director of the second degree program.

Academic Scholarship

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

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

The grade of “B” represents the benchmark for the Graduate School. It indicates that the student has demonstrated competency in the subject matter of the course, for example, 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. Only students who meet this standard and, in addition, demonstrate exceptional comprehension and application of the course subject matter merit an “A.”

The Grade of “C” and Repeated Courses

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

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

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

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

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

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

Students in the Doctor of Management (DM) program are expected to earn a minimum grade of “B” or “S” in every course attempted. This includes any course work at the 600 level (courses open to both master’s and doctoral students) used to fulfill DM requirements. For purposes of the DM program, both “B” and “S” are understood to be equivalent to 3.0 on a 4.0 scale. A DM student who receives a grade of “C” in a course must repeat that course and earn a “B” or better. This option to repeat a course may be exercised only once. A DM student who receives a second “C,” or who receives a grade of “F” or “U” in any course, will be academically dismissed from the DM program.

The “one-repeat” option described above notwithstanding, a DM student who receives a grade of “C” or lower in either of the two doctoral core seminars is subject to immediate academic dismissal from the program.

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

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

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

The Grade of “I” (Incomplete)

The grade of “I” is exceptional and is given only to students whose completed coursework has been qualitatively satisfactory but who have been unable to complete all course requirements because of illness or other extenuating circumstances beyond their control. The grade of “I” may be considered only for students who have completed at least 50 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 a 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 faculty member will submit a grade change form converting the grade to the letter grade indicated on the original agreement. Graduate faculty may not issue a terminal “I” grade.

Notice of grade changes must reach the Operations Team (301-985-7236) 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 Operations Team will notify each student who has been given an “I” when the grade change is finalized.

The Grade of “W” (Withdrawal)

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

Academic Integrity

Academic integrity is central to the learning and teaching process. Students are expected to conduct themselves in a manner that will contribute to the maintenance of academic integrity by making all reasonable efforts to prevent the occurrence of academic dishonesty. Academic dishonesty includes (but is not limited to) obtaining or giving aid on an examination, having unauthorized prior knowledge of an examination, doing work for another student, and plagiarism of all types. Students can avoid unintentional plagiarism by carefully following accepted scholarly practices. Also, students shall not submit as their own work any work that has been prepared by others. Appropriate sanctions (which include suspension or expulsion) will be imposed on any student who is found guilty of acts of academic dishonesty.

Plagiarism

Plagiarism is the intentional or unintentional 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; and 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 those sources in footnotes.

Grievance/Appeal Procedure

Students having legitimate complaints about Graduate School faculty 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 Associate Dean of Academic Affairs at 301-985-7200 or send an e-mail message to graddean@umuc.edu for information on the procedure to follow.

Policies and Regulations on Student Drug and Alcohol Use

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

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

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

Program Completion Requirements

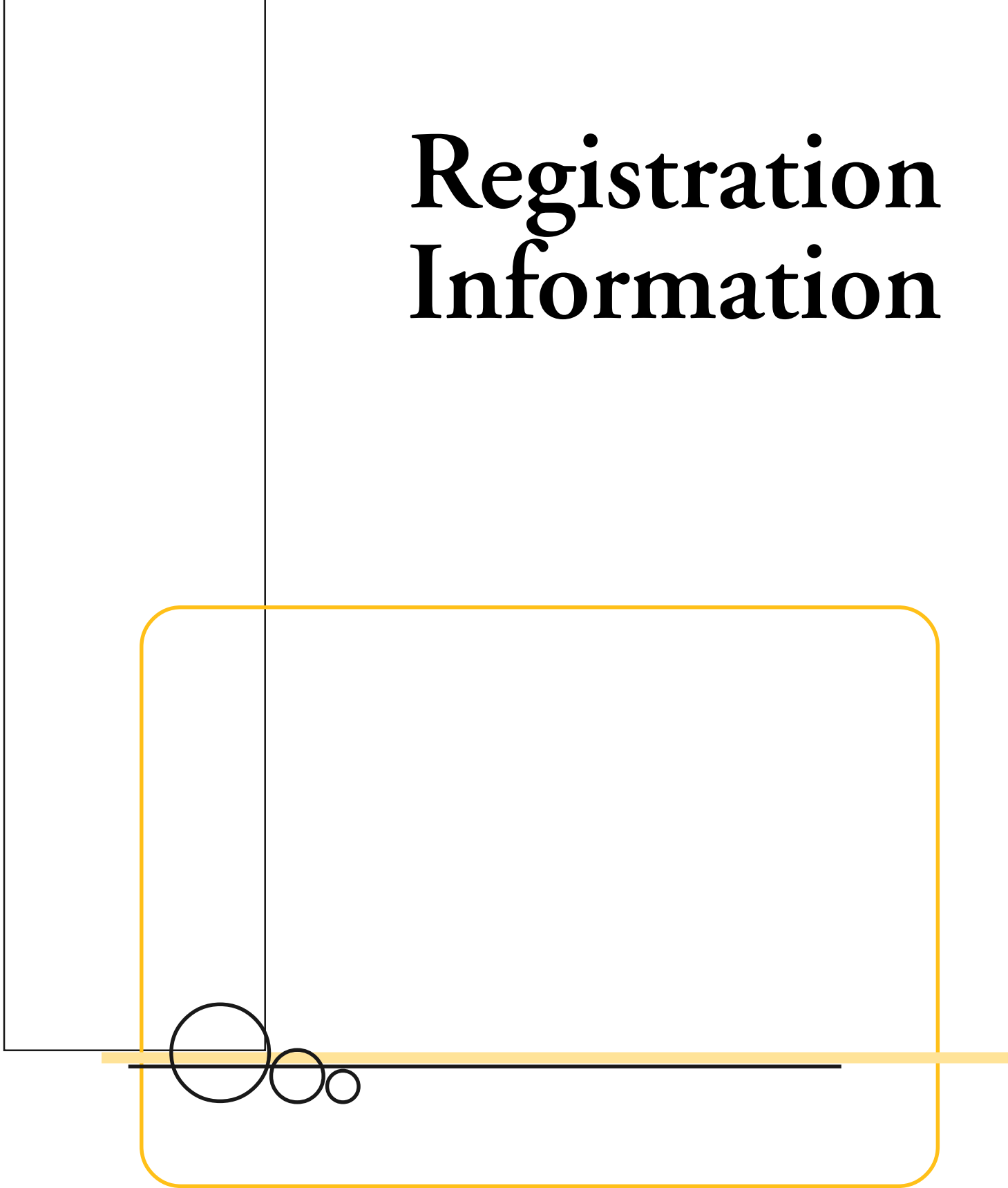
To graduate, students must successfully complete the required coursework within the designated time for their degree.

Master’s students have two semesters within the 7-year limit to complete the Management Project. The semesters do not have to be consecutive. Alternatively, students can take the two-course option (within the 7-year limit).

Transcript Services

Students should contact the Office of the Registrar to receive an official UMUC transcript.

Registration Information



Regulations

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

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

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

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

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

Academic Credit

The standard graduate programs of UMUC are offered on a semester basis with one accelerated summer session. The normal measure of academic work is the semester hour. Each semester hour requires one hour of class attendance on-site or online per week per semester. Most courses carry 3 semester hours. Accelerated programs are offered on a semester basis, each worth 6 to 9 credits.

Course Load

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

Full-time students who are not employed during the summer or who work fewer than 20 hours a week may request to take additional courses by submitting a request in writing to the Associate Dean, Graduate Services (except for MBA). Requested exceptions

to the academic load must be made in writing to the Associate Dean, Graduate Services, at least one month before the beginning of the semester.

Requirements for Doctor of Management

Requirements for the Doctor of Management are unique. Please refer to the DM section on page 32.

Time Limit for Degrees

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

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

Time Limit for Certificates

The graduate certificate programs require from 12 to 24 semester hours, with a minimum GPA of 3.0 and one grade of "C" allowed. The Graduate School will accept up to 3 graduate transfer credits if they were completed within the timeframe stated below.

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

Transfer Credits

Up to 6 semester hours of graduate credit may be considered for transfer to a graduate degree program at UMUC if earned at a regionally accredited institution and if applied to the student's program of study (3 semester hours may be considered for transfer to the MBA program). 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.
3. The credits must have been awarded no more than 7 years (five for MBA) prior to the date the student completes his or her current program requirements (see above for time limits for certificates).
4. The student must have earned a grade of "B" or better in the courses considered for transfer. These grades are not included in the calculation of the student's grade-point average.

5. The advisor and the program director must have determined that the transfer courses are relevant to the student's program of study.
6. The credits must have been earned at a regionally accredited institution and be equivalent to graduate-level coursework. Graduate students at UMUC must complete a minimum of 12 semester hours at the graduate level, with a minimum GPA of 3.0, and have degree status before transfer credits will be released or posted to their permanent records.

Audit and Pass/Fail

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

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

State Residency Status

It is the policy of the Board of Regents of the University System of Maryland to recognize the categories of in-state and out-of-state students for purposes of admission, tuition, and charge differential at those constituent institutions where such differentiation has been established. The student is responsible for providing the information necessary to establish eligibility for in-state resident status.

Students who are financially independent or financially dependent shall have their residency classification determined on the basis of permanent residency. A student will be assigned in-state status for admission, tuition, and charge differential purposes only if the student (or in the case of a financially dependent student, the student's parent, guardian, or spouse), fulfills all of the following criteria.

For at least 12 consecutive months immediately prior to and excluding the last date available to register for courses in the semester/term for which the petition applies, the student (or if the student is financially dependent, the parent, guardian, or spouse) must:

1. Own or rent and occupy living quarters in Maryland
2. Maintain substantially all personal property in Maryland
3. Pay Maryland income tax on all earned taxable income, including all taxable income earned outside the state
4. Receive no public assistance from a state other than Maryland or from a city, county, or municipal agency other than one in Maryland

5. Have a legal ability under federal and Maryland law to reside permanently without interruption in Maryland

For at least 11 consecutive months immediately prior to and including the last date available to register for courses in the semester for which the application applies, the student, or if the student is financially dependent, the parent, guardian, or spouse must:

1. Register all owned motor vehicles in Maryland
2. Obtain a valid driver's license issued by the state of Maryland

Within the 12 consecutive months immediately prior to and including the last date available to register for courses in the semester for which the application applies, the student (or if the student is financially dependent, the parent, guardian, or spouse) must register to vote in Maryland.

The following categories of students have in-state status:

1. Full-time or part-time (at least 50 percent time) permanent employees of the University System of Maryland
2. Spouses or dependent children of full-time or part-time (at least 50 percent time) permanent employees of the University System of Maryland
3. Graduate assistants within the University System of Maryland
4. Full-time, active-duty members of the U.S. armed forces, their spouses, or a financially dependent child
5. 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

To apply for in-state status, a completed Petition for Change in Residency Classification for Admission, Tuition, and Charge Differential form must be filed, together with all appropriate documentation. The application must be submitted to the office of Graduate Services no later than the last day of late registration. Only one petition may be submitted per semester. All questions concerning in-state status should be directed to the office of Graduate Services at 301-985-7155 or by e-mail at gradinfo@umuc.edu.

International Applicants

To be considered for admission, international students must have:

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

1. International Consultants of Delaware, Inc. (ICD)
109 Barksdale Professional Center
Newark, Delaware 19711-3258 USA
Phone: 302-737-8715; Fax: 302-737-8756
E-mail: icd@icdel.com
2. American Association of Collegiate Registrars and Admissions Officers (AACRAO)
Office of International Education Services
One Dupont Circle, N.W., Suite 520
Washington, D.C. 20036-1135 USA
Phone: 202-293-9161; Fax: 202-872-8857
E-mail: goughd@aacrao.nche.edu or oies@aacrao.nche.edu
3. International Education Research Foundation (IERF)
P.O. Box 66940
Los Angeles, California 90066 USA
Phone: 310-390-6276; Fax: 310-397-7686
E-mail: info@ierf.org

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

- Proven English language proficiency. Applicants who have not received a bachelor's degree from the United States, the United Kingdom, Australia, New Zealand, Commonwealth Caribbean, or English-speaking Canada must demonstrate English proficiency by submitting a minimum score of 580 on the Test of English as a Foreign Language (TOEFL) and a minimum score of 5 on the Test of Written English (TWE) to be eligible for admission. Applicants must arrange to have official score reports sent directly from the testing agency to the Graduate School. Test scores must be less than two years old.
- A photocopy (front and back) of either a permanent residency card, work authorization card, or the first page and visa page of a valid passport and Form I-94 are required for those international students wishing to study in UMUC programs in the United States.

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

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

Social Security Number

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

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

Advising/Study Plans

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

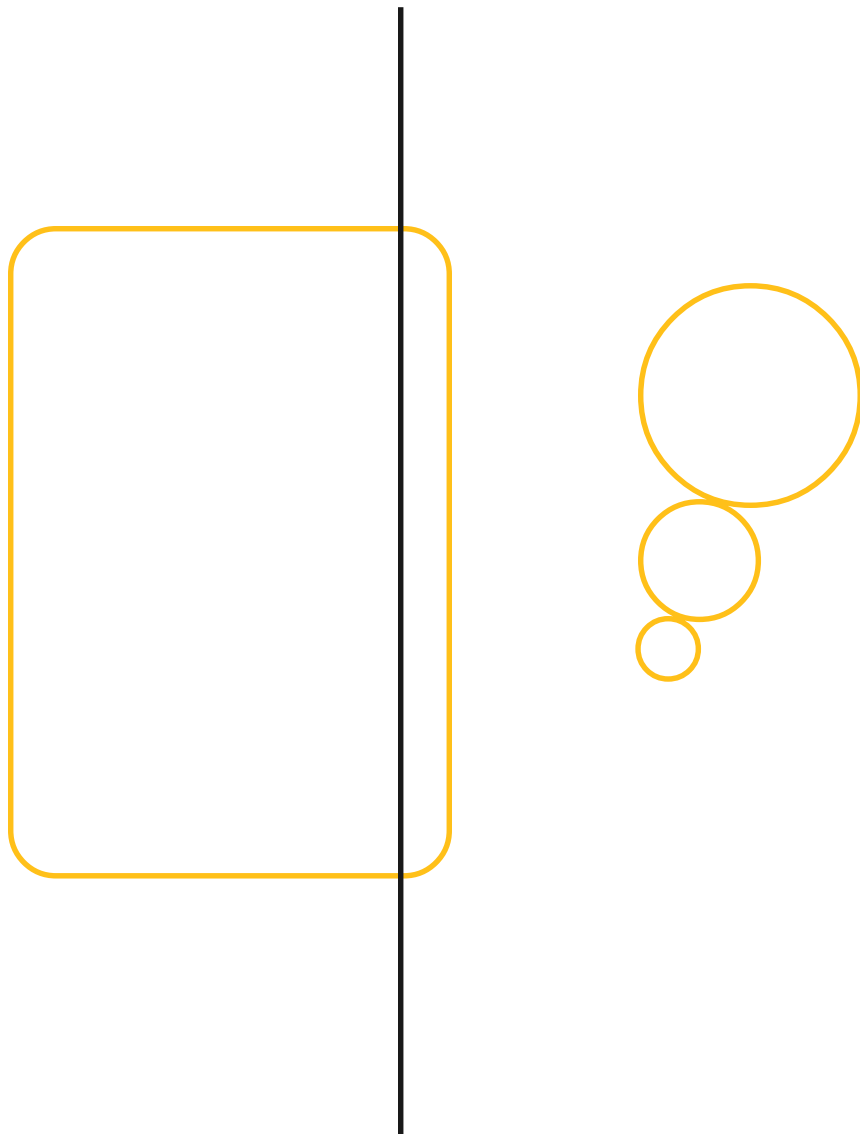
It is up to the student to seek advising and to keep track of his/her program requirements. Students should retain the catalog that was in effect when they entered their program as it contains all degree requirements for which they will be held accountable.

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

Golden ID Program

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

Online Programs



Online Programs

Information about the Graduate School's online opportunities is available at www.umuc.edu/gsmf/gsmtdist. An online orientation to distance education at UMUC is available at www.umuc.edu/distance/index.html.

Introduction to Graduate Distance Education

Graduate Programs from the Worldwide Leader in Distance Education

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

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

High-Quality Graduate Programs

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

Distinguished Faculty

Faculty members are selected and retained based on their extensive management and professional experience, teaching ability, and educational achievements. More than 87 percent have doctorate or terminal degrees.

Convenient for Busy Adults

UMUC offers 11 online master's degree programs with 19 specialty tracks that permit you to earn your graduate degree from anywhere in the world. Through predominantly asynchronous, computer-mediated conferencing via the World Wide Web, you can earn your degree in only two and a half years—or you can advance at a more leisurely pace if you wish. It's your choice. The exception is the 24-month, part-time MBA program, through which students progress in cohort groups.

Online Degree Programs

The Graduate School offers 11 degree programs with 19 specialty tracks and four dual degrees online asynchronously via WebTycho:

- Master of Business Administration
- Master of Distance Education
- Master of International Management
 - International Commerce
 - International Finance
 - International Marketing
- Master of Science in Computer Systems Management
 - Applied Computer Systems
 - Database Systems and Security
 - Information Resources Management
 - Software Development Management
- Master of Science in Electronic Commerce (*pending approval*)
- Master of Science in Environmental Management
- Master of Science in Information Technology
- Master of Science in Management
 - Accounting
 - Financial Management
 - Health Care Administration
 - Human Resource Management
 - Interdisciplinary Studies in Management
 - Management Information Systems
 - Marketing
 - Not-for-Profit Management
 - Procurement and Contract Management
- Master of Science in Technology Management
 - General Program
 - Biotechnology Management
 - Technology Systems Management
- Master of Science in Telecommunications Management
- Master of Software Engineering
- Dual MBA Degrees
 - Master of International Management/MBA
 - Master of Science in Electronic Commerce/MBA (*pending approval*)
 - Master of Science in Management/MBA
 - Master of Science in Technology Management/MBA

Personal Satisfaction and Career Advancement

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

Quality Educational Programs Addressing Real-World Challenges

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

Eleven Master's Degrees and Four Dual Master's Programs Available Anywhere in the World

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

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

Online Courses

Demand for online courses is extraordinarily heavy. Students are advised to register early. The distance education schedule of classes is available online at www.umuc.edu/studserv/isis/schedule/grdistsocmenu.html.

Graduate School tuition and fees are the same for online and on-site courses.

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

The Graduate School's online courses maintain the same academic standards as on-site courses. Course content, texts, requirements, assignments, and class participation are comparable for online and on-site courses. 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 predominantly asynchronous and students are expected to be active participants online, students are encouraged to log in frequently to check what has transpired in their online classroom (in lieu of face-to-face class meetings).
4. Online students need disciplined work habits, effective time management skills, and the ability to work both alone and collaboratively.

Full Services Provided Online

With the help of full electronic services, graduate students may inquire, apply, register, pay tuition, receive grades, update information, and receive academic advising, career services, financial aid, and orientation information online. Graduate students have access to a wide variety of online publications and to more than 65 proprietary databases.

Online Technical Requirements

WebTycho is UMUC's interactive Web-based course management system. Current information about technical requirements is available at <http://tychousa.umuc.edu>. Students are responsible for their own phone line and Internet access costs.

Some Programs Have Additional Technical Requirements

Students in the Master of Business Administration, Master of Science in Computer Systems Management, Master of Software Engineering, and Master of Science in Telecommunications Management programs will need the following additional requirements:

- Pentium-based PC (or Mac equivalent) with at least 32 MB of RAM (64 MB is preferred)
- Minimum 100 MB hard drive space (1 GB is preferred)
- 8X CD ROM (12X CD-ROM is preferred)
- Sound-Blaster-compatible sound card with speakers or headphones
- Microphone
- Netscape Communicator 4.5 or higher
- Microsoft Office Suite (including Word, Excel, and PowerPoint)
- Adobe Acrobat Reader
- QuickTime plug-in

WebTycho-Enhanced Sections

All Executive Programs sections and some other select Graduate School on-site sections use WebTycho as an enhancement. WebTycho-enhanced classes provide on-site students with online educational opportunities. The faculty member may elect to use some or all of WebTycho's online features in conjunction with face-to-face classroom activity. Some WebTycho-enhanced sections are

identified in the Course Schedule section of the print version of the graduate *Schedule of Classes*.

Policy on Connectivity and Computer Literacy

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

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 Services 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/gsmf/resfacil.html#unix. 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, Quattro-Pro, or Microsoft Excel; and Internet electronic mail services. Knowledge of Microsoft Windows and Internet information services such as the World Wide Web is also highly recommended. Internet information services may be necessary to conduct appropriate

research for some courses. The Library Skills for the Information Age course is required for all new students as of fall 1998, all students who reapply for admission and who have completed 6 semester hours or less, and for students who have graduated and want to pursue the dual degree who have not yet taken the course. This noncredit course's fee is \$75.

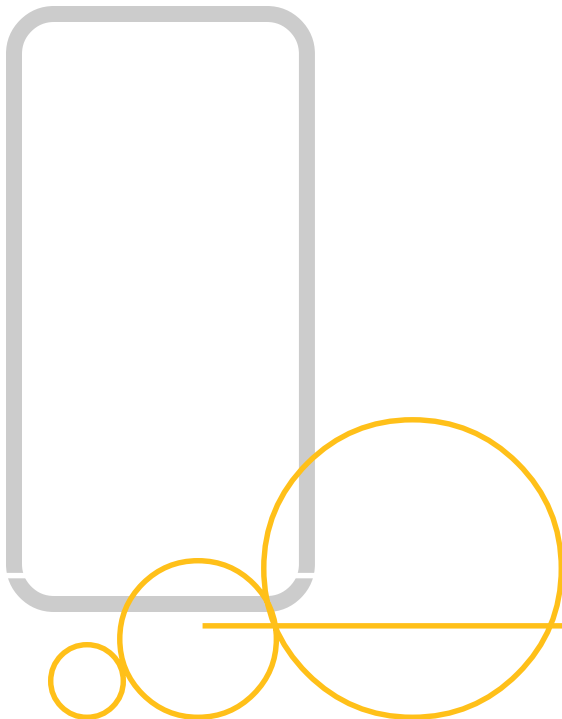
Applicants and students who require further training in the use of Internet services and basic software packages may wish to consult the UMUC Undergraduate *Schedule of Classes* or speak to an undergraduate counselor. The schedule may be obtained by calling 301-985-7000, and counselors may be reached at 301-985-7939.

Alternate Instruction Format

Interactive Video Network (IVN)

The IVN system uses telecommunication technology to link students and faculty at two or more sites for exchange of visual and audio information. The image of the instructor and each student permits active classroom discussions at each site. The fact that students are able to see and hear each other during the discussion enhances the classroom experience. Students at different sites can engage one another in classroom discourse to debate specific course-related issues. Participating sites may include Adelphi, Annapolis, Frederick Community College, Fort Detrick, Shady Grove, Southern Maryland Higher Education Center, USM Downtown Baltimore Center, and Waldorf.

Graduate Programs



Doctor of Management

The Doctor of Management (DM) degree program was developed in recognition of the critical importance of an interdisciplinary and global perspective for leaders and managers. Building on the Graduate School's three principal knowledge bases—management, technology, and international operations—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.

Degree Program

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 such areas as international management, technology and information systems, marketing, finance and economics, project management, research methods, and the behavioral sciences. Twenty-one semester hours, including 12 for the completion and defense of the dissertation, are dedicated to developing depth of knowledge in the chosen area of specialization. Eighteen semester hours are devoted to doctoral core seminars covering epistemology and critical thinking, systems and environment, doctoral research methods, technology and social systems design, leadership in the 21st century, and innovation and strategy for global competition. Three semester hours are reserved for topics of special interest to the candidate. Prior to carrying out and defending the dissertation, candidates must successfully

complete a comprehensive examination. All degree requirements must be completed within seven years of the start of the first seminar; all coursework and the comprehensive exams must be completed within 4 years to allow 3 years for completion of the dissertation.

Admission Requirements

In order to be eligible to apply to the DM, 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 GRE general test or the GMAT. The scores must be less than five years old. 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.**

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

Executive Director

Eric Dent, *Executive Director*
edent@umuc.edu

Pat Musick, *Administrative Assistant*
pmusick@umuc.edu
Phone: 301-985-7056

Program Director

vacant

Coordinator

Carol Michelson, *Coordinator*
cmichelson@umuc.edu

Curriculum

Breadth Component

Requiring from 6 to 18 semester hours (depending on prior graduate education background), the breadth component lays the groundwork for an interdisciplinary approach to management. It familiarizes the students with some of the important disciplines related to management and contributes to their ability to manage complex, large-scale projects involving specialists from a variety of backgrounds. The breadth component ensures that doctoral students will have exposure to the following areas:

- International competition
- Behavioral sciences
- Technology/information management
- Economics/finance
- Marketing
- Project or organizational management/assessment
- Research methods

To fulfill the breadth requirement, a doctoral student must demonstrate successful completion of graduate-level coursework

in the above disciplines. Students who have not already completed such coursework may take certain courses from UMUC's master's degree programs to fulfill the breadth requirements.

Doctoral Core Seminars

The doctoral core builds on the background students gained from the breadth component or their prior graduate work. On completion of the core, students will be able to examine a problem or opportunity creatively using an array of theoretical constructs and: suggest innovative solutions, lead organizational change, provide strategic planning and implementation, design and undertake a research project in response to an organizational need, and foster lifelong learning in others. The doctoral core is taught in the "executive" format—primarily Saturday sessions and online conferencing—and is divided into two seminars, each worth 9 semester hours. In each of these two core seminars there is a heavy emphasis on information and technology systems and their interactions and interrelationships with organizational processes.

Doctoral Seminar A DMGT 701 9 semester hours

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.

- Module I Systems Thinking and the Environment
- Module II Epistemology and Critical Thinking
- Module III Doctoral Research Methods

Doctoral Seminar B DMGT 702 9 semester hours

This seminar builds on the knowledge, skills, and insights developed in Seminar A and the content covered by the program breadth requirements (the breadth requirements must be completed before this seminar is taken). The emphasis is on depth, integration, and application in such key areas as technology management, leadership development and decision making, and strategic management.

- Module I Technology and Social Systems Design
- Module II Leadership for the 21st Century
- Module III Innovation and Strategy for Global Competition

Special Topics

Students in the DM program are encouraged to explore a special topic or area with which they are not familiar but in which they have a strong interest. The 3 semester hours set aside for this component can be used in a variety of ways. A student may choose, for example, to undertake supervised, independent parallel reading in order to complement topics in the doctoral core. A student may also design a new product or teach a course at the master's level under the supervision of a graduate faculty member.

Comprehensive Examinations

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

Specialization/ Dissertation

Because the recipient of a doctoral degree is, among other things, an expert in a particular subject, the DM program requires students to increase depth of knowledge in one of three areas of specialization: international operations, organizational processes, or technology and information systems. This depth of knowledge is gained in two ways.

- First, students take 9 semester hours of coursework in their area of specialization. The coursework can be completed entirely at UMUC or can include up to 6 semester hours taken at another approved institution.
- Second, the doctoral dissertation is an extension of this coursework and further develops expertise in the area of specialization, resulting in a total of 21 semester hours in the area of specialization.

Dissertation

The dissertation is the culmination of the DM program. It is a synthesis of the knowledge gained in the coursework phase of the program, and provides an opportunity to apply the knowledge to a real-world situation in the student's area of specialization. The dissertation is in two parts, each earning 6 semester hours. In the first part, the student develops a proposal for the dissertation and defends that proposal before a committee of faculty members. Once the proposal is approved, the student advances to the second phase, which is the actual implementation of the dissertation. There is a wide range of possible dissertation projects. A dissertation project may consist of the design, development, and delivery of a new product or service; an organizational or project assessment; or a new system to respond to a particular problem or opportunity in an organization while contributing to best practices in the subject area.

Master of Business Administration

This program is designed only in an online format for working professionals from a wide range of academic and organizational backgrounds. The program can be completed in 24 months without interrupting the student's careers. The objectives of the program are to explore the evolving nature of corporations, blend leadership with change management, better measure an organization's intellectual assets, merge product development with entrepreneurship, and foster new approaches to measuring the economic performance of organizations. Organizational and management processes are discussed in the context of the global business environment. The MBA program combines current management theory and relevant research with the real-world experiences of students and faculty to address the major competitive challenges of the 21st century.

Students interested in an accelerated executive MBA format should refer to page 94. Classes for this program are held on Saturdays in a face-to-face format and the coursework is enhanced via the Internet. The entire Executive MBA program can be completed in 21 months.

UMUC also offers four dual MBA degrees in a non-cohort format: the Master of International Management/MBA, the Master of Science in Electronic Commerce/MBA, Master of Science in Management/MBA, and the Master of Science in Technology Management/MBA. These degree programs are offered either online or in a combination of online and traditional face-to-face format. Please refer to pages 85–93 for more information.*

*pending approval

Degree Program

The online MBA program consists of seven 6-credit seminars, each of which is 12 weeks long with 2 weeks off between seminars. Each student is assigned to a cohort of approximately 30 students that continue together through completion of their MBA program. Upon application to the MBA program, students register for an 8-week orientation course consisting of a series of self-assessment activities and background reading. Students must satisfactorily complete the orientation course, OMBA 601 Organizational and Management Processes before they are allowed to begin the first seminar.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has

developed a 100-percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

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

Degree Status

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

Program Director

Master of Business Administration

Michael Evanchik, *Program Director*,
mevanchik@umuc.edu

Joyce Shirazi, *Program Director*,
jshirazi@umuc.edu

Meena Bipat, *Administrative Assistant*
mbipat@umuc.edu
Phone: 301-985-7710

Coordinators

Barbara Asabre, *Coordinator*
basabre@umuc.edu

Kathleen Puckett, *Distance Education
Coordinator*
kpuckett@umuc.edu

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 26) for information about the TOEFL and TWE examinations.

Provisional Status

Provisional status for the MBA may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Those who achieve a 3.0 GPA during completion of six MBA credits are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major

area of study, submission of the official transcript from the bachelor-degree granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Certificate Program

The MBA program has 12 certificates related to this discipline. See page 110 for more information.

OMBA 600 0 credits

Orientation Course

This course is designed to provide students entering the online MBA program with a common foundation in fundamental management concepts across a broad spectrum of subject areas. Students also have the 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 effectively, individually and in teams. There are assignments in a number of subject areas, including management theory, economics, statistics, financial accounting, financial decision making, product costing, and the Theory of Constraints, in the course. Students are expected to review each of the subject areas and complete the associated assignment on their own. The assignments can be completed in any order, and a faculty member is available to answer any questions students may have. Students should expect to spend approximately 8 weeks completing all assignments. By the end of the course students should have a good understanding of both the academic requirements and technical skills necessary to succeed in the MBA program.

OMBA 601 6 credits

Organizational and Management Processes

This seminar introduces participants to the concepts and theories that are the essential building blocks of management thinking. These key themes are incorporated throughout the program and will be further developed in subsequent seminars. They are

sequenced so that they build upon each other during the course of the first seminar.

The core themes are:

- Systems thinking
- Critical thinking and creativity
- Ethics and social responsibility
- The impact of technology on management
- The future of organizations
- Global challenges

OMBA 602 6 credits

The Dynamics of Individuals and Groups at Work

This seminar 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 seminar includes interpersonal skill development, with an emphasis on effective communication processes, to assist students in increasing their competence in successfully working with people.

OMBA 603 6 credits

The Marketing of New Ideas

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 seminar 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 seminar 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
- Electronic commerce
- Venture capital

OMBA 604 6 credits

Technology and Operations Management

This seminar 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 seminar. Topic areas include:

- Information systems and telecommunications
- Control charts
- Decision trees
- Forecasting
- Expert systems
- Operations management
- Project management

OMBA 605 6 credits

Economics of Management Decisions

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 issues. The global economy is continually undergoing changes. Of special significance is the evolution of financial markets in response to rapidly expanding worldwide investment opportunities. This 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 of performance evaluation are discussed—economic value added (EVA™), the Balanced Scorecard, and open-book management. Cost management remains an essential topic within every organization. In this regard, activity-based costing will be 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 also analyzed from the perspective of the theory of constraints. The seminar is divided into four modules:

- Historical perspective on managerial decision making
- Valuation issues

- Performance measurement issues
- Cost management issues

OMBA 606 **6 credits**

Organizations and the External Environment

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. Topic areas include:

- Business and antitrust law
- Corporate governance
- Regulatory environments
- International trade
- Macroeconomic policy
- Technology innovation

OMBA 607 **6 credits**

Strategic Action Planning

Drawing on the broad array of content covered in the first six seminars, this capstone seminar integrates management techniques and methodology through various means of strategic action planning. This seminar builds on foundations laid in previous seminars, deepens insight into strategic thinking and strategy implementation, and concludes with a practical research project. Students may choose to develop a business plan for an organization, which could be their own employer or own venture; design and complete an organizational assessment with change strategy as appropriate; examine futuristic trends in business and leadership; or develop an integrative organizational model to meet the challenges of the future. Topic areas include:

- Strategic models
- Strategy formulation and implementation
- Organizational assessment
- Building business plans
- Elective Component:
 - Business plan
 - Organizational assessment
 - Futures model

Master of Distance Education

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

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

Degree Program

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

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100 percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

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

Degree Status

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

Program Director

Master of Distance Education

Eugene Rubin, *Program Director*
erubin@umuc.edu

Anna Roe, *Administrative Assistant*
aroe@umuc.edu
Phone: 301-985-7034

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 26) for information about the TOEFL and TWE examinations.

Provisional Status

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

an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Classification

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

Certificate Program

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

- Distance Education Foundations*
- Distance Education and Technology
- Library Services in Distance Education
- Training at a Distance
- Teaching at a Distance

See page 109 for certificate information.

* Offered in partnership with Oldenburg University in Germany.

Core Courses

OMDE 601 3 credits

Foundations of Distance Education

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

See page 109 for certificate information.

OMDE 602 3 credits

Distance Education Systems

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

OMDE 603 3 credits

Technology in Distance Education

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

See page 109 for certificate information.

OMDE 604 3 credits

The Management of Distance Education

This course introduces the student to the organization, management, and administration of distance education systems. Specific issues include roles (both traditional and unique), leadership, human resource management, employee relations, the role of information technology, student support services, faculty/staff development, 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 605 3 credits

New and Emerging Media in Distance Education

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

OMDE 606 3 credits

The Economics of Distance Education

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

education. The module has been developed by Thomas Helsmann (Germany).

OMDE 607 **3 credits**

Instructional Design and Course Development in Distance Education

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

Elective Courses

OMDE 611 **3 credits**

Issues in the Delivery of Library Services to Distance Students

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.

See page 110 for certificate information.

OMDE 613 **3 credits**

K–12 Distance Education

Distance education (DE) within the K–12 environment is a somewhat unique and special application of distance education. Students work in a different environment and under different constraints than higher

education students and business employees, yet the principles and techniques are the same. This course explores a variety of topics including models of K–12 distance education, DE resources for the K–12 environment, distance course development for the K–12 environment; virtual high schools; examination of a variety of local, state and national implementations of K–12 distance education; teacher training in distance education, and so forth.

OMDE 621 **3 credits**

Training at a Distance

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

See page 110 for certificate information.

OMDE 622 **3 credits**

The Business of Distance Education

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

OMDE 623 **3 credits**

Web-Based Learning and Teaching and the Virtual University

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

OMDE 624 **3 credits**

Student Support in Distance Education

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

OMDE 625 **3 credits**

Teaching and Learning in Distance Education

An historical review of educational learning theory appropriate to distance education is presented. This includes: classic distance education theory, the theory of industrialized education, transactional theory, contemporary learning theory (Constructivist

learning theory), and so forth. Students explore the differences in course materials and activities that result from the application of various theories. Particular emphasis is placed on contemporary theories that are presently being promoted in Web-based learning.

OMDE 626 **3 credits**

International and Cross-Cultural Aspects of Distance Education

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 DE 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 **3 credits**

Advanced Technology in Distance Education I: Synchronous Learning Systems

This is an advanced course that builds upon OMDE 603 Technology in Distance Education. The course focuses specifically on synchronous (real time) technologies such as satellite broadcasting, microwave broadcasting, public TV broadcasting, audio conferencing, site-based video conferencing, desktop video conferencing, application sharing, chat tools, MOO's, MUD's, 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 **3 credits**

Advanced Technology in Distance Education II: Asynchronous Learning Systems

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

computer technologies to ensure that the students can effectively manage the technical implementation of these tools.

OMDE 633 **3 credits**

Information Technology and Distance Education

The Information Technology (IT) unit is one of the most critical units in an organization that delivers distance education, particularly via the World Wide Web. This course looks at the IT function and explores the critical role of IT in a distance education and training organization. Particular emphasis is placed on organizational and structural models, institutional IT goals and mission, hardware and software, telecommunications, integrated systems (particularly student services/ finance/registry systems), insourcing versus outsourcing, and a variety of other management issues.

OMDE 690 **3 credits**

Distance Education Project

This required capstone course covers two significant tasks for students:

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

Master of International Management

As the business communities of the world become more intertwined, managers are increasingly challenged by such factors as cultural differences, fluctuating exchange rates, trade regulations, foreign competition, and the opening of world markets. The Master of International Management is an innovative, graduate-level management degree program developed to help 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.

Department Chair

Clarence J. Mann, *Chair*
cmann@umuc.edu

Wendy Adams, *Administrative Assistant*
wadams@umuc.edu
Phone: 301-985-7029

Program Director

International Commerce
International Finance
International Marketing

Alfred S. Raider, *Program Director*
araider@umuc.edu

Coordinator

Irina Ryland, *Academic Coordinator*
iryland@umuc.edu

Degree Program

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

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

A student may be admitted in one of four classifications: degree seeking, provisional, certificate, or decision pending. The

decision-pending classification is temporary while students await final approval of admission. The admission requirements for each classification are explained below.

Degree Status

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

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 26) for information about TOEFL and TWE examinations.

Provisional Status

Provisional status may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to

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

Decision-Pending Status

The decision-pending classification is short term and is meant for students who have not completed the admission process described above. Students may enroll in one of the following graduate courses before UMUC has received the official college

transcript from the bachelor's-degree-granting institution: IMAN 601, ADMN 630, ADMN 631, or ADMN 625. Students must receive an admission decision before subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

Certificate Program

The Master of International Management program has three certificates related to this discipline. See page 113 for more information.

Area Studies Option

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

Locations

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

Core Courses

IMAN 601 **3 credits**
Strategic Management in a Global Environment

Strategic management is a foundational theme in the MIM program. The global context established by this course, its

strategic concepts and methodologies run through the entire program curriculum. The course develops a framework for analyzing the competitive structure of industries, the social and regulatory environments of business, and the strategic competencies of firms within a national, transnational, and global context. Through case analysis, strategy alternatives are evaluated in the context of differing national and regional business environments and markets. Organizational and functional issues are examined as well, including transnational company structures and the roles and tasks of managers seeking to operate effectively in a global context.

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

ADMN 630 **3 credits**
Financial Decision Making for Managers

or

ADMN 631 **3 credits**
Financial Management in Organizations

For a full description of these courses, see page 62.

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

IMAN 615 **3 credits**
Foreign Investment and Strategic Alliances

An indepth treatment of the more complex business strategies and transactions for conducting and expanding transnational business operations is offered. Tools of analysis include environmental scanning, stakeholder analysis, and methods for evaluating and managing a variety of strategies in an organizational and transactional context. The topics discussed include direct foreign investment, foreign subsidiary acquisition, technology transfer arrangements, licensing, franchising, joint ventures, and various types of strategic alliances and partnerships between companies based in different countries.

IMAN 625 **3 credits**
International Trade and Trade Policy

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

ADMN 625 **3 credits**
Organizational Communication

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

ADMN 635 **3 credits**
Organizational Leadership

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

IMAN 650 **3 credits**
Managing Overseas Operations

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

Prerequisites: Completion of all core and track courses.

End-of-Program Options

Management Project

IMAN 690
and IMAN 690M **3 credits**

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

Students have two semesters to complete the management project.

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

Two-Course Option 6 credits

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

Elective/Depth Courses

IMAN 661 3 credits

Area Studies: Business Strategies for Europe

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

Course sessions will be scheduled on 8 Saturdays or online. Students are required to take part in and pay the cost of a 10-day study trip to Europe, which is integral to the coursework. Interested persons should contact the IMAN department chair or program director. Preference will be given to students who have completed all core and track courses. Students without knowledge of marketing will be admitted only by prior arrangement with the IMAN program director or associate director.

International Commerce Track

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

International Finance Track

IMAN 635, IMAN 640, and IMAN 661

International Marketing Track

IMAN 635, IMAN 645, and IMAN 661

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

Interdisciplinary/Breadth Courses

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

**International finance track students only.*

International Commerce Track

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

IMAN 630 3 credits

International Financial Management

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

institutions in national, regional, and international capital markets.

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

IMAN 635 3 credits

The Public Sector in International Commerce

Major issues of national competitiveness are covered, including the measurement of competitiveness and the role of the public sector in shaping competitiveness. 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 3 credits

International Marketing Management

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

IMAN 645 3 credits

The International Legal and Tax Environment

International business transactions in the context of public and private international law and tax systems are reviewed. Comparative national and regional (European Community) legal systems, and a variety of commercial and corporate matters such as contract law and the transactional environment of business, are covered. The impact of competing investment laws, national tax issues including the protection of intellectual property rights, and the resolution of disputes through international litigation, arbitration, and mediation are discussed.

International Finance Track

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

ADMN 639 **3 credits**
Multinational Financial Management
For a full description of this course, see page 65.

IMAN 645 **3 credits**
The International Legal and Tax Environment
For a full description of this course, see page 43.

Plus any two of the following three courses:

ADMN 632 **3 credits**
Financial Management of Current Operations
For a full description of this course, see page 65.

ADMN 633 **3 credits**

Long-Term Financing of Organizations
For a full description of this course, see page 65.

ADMN 634 **3 credits**
Financial Markets and Investments
For a full description of this course, see page 65.

International Marketing Track

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

IMAN 640 **3 credits**
International Marketing Management
For a full description of this course, see page 43.

ADMN 687 **3 credits**
Market Segmentation and Penetration
For a full description of this course, see page 69.

As of spring 1999, ADMN 687 replaced ADMN 685. Students who have taken

ADMN 685 before that time will not be affected.
or

ECOM 620 **3 credits**
E-Marketing
For a full description of this course, see page 51.

IMAN 630 **3 credits**
International Financial Management
See a full description of this course on the previous page.

IMAN 620 **3 credits**
International Marketing Research and Analysis

Applications of cross-cultural marketing research methods and techniques useful to managers and administrators with responsibility for assessing or increasing the demand for their organization's product, programs, and services are presented in this course. Methodologies and special topics related to the design and completion of marketing research projects are presented, including the survey, observational, and experimental methods used in assessing and segmenting markets. Special topics in data analysis that are especially useful for marketing research (for example, focus groups, customer visits, conjoint analysis, and multidimensional scaling) are covered.

Master of Science in Computer Systems Management

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

(See also the Executive Master's Program in Information Technology. This program is offered in an accelerated seminar format with Saturday classes.)

Degree Program

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

Students may choose one of four tracks:

- Applied Computer Systems
- Database Systems and Security
- Information Resources Management
- Software Development Management

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and informa-

tion resources, the Graduate School has developed a 100 percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP 610 Library Skills for the Information Age within their first 6 credits of study.

National Defense University

Students who have completed the Advanced Management program or the Chief Information Officer Certificate program at the National Defense University Information Resources Management College (IRMC) may transfer 15 credits in partial satisfaction of the Master of Science in Computer Systems Management degree (subject to Graduate School time limits of 7 consecutive years) to replace CSMN 601, TMAN 612, TMAN 614, TMAN 632, and one elective. Students must apply and meet the established admission criteria for the CSMN program.

Department Chair

Information and Telecommunications Studies

John M. Richardson, *Chair*
jrichardson@umuc.edu

Regina Massaquoi, *Administrative Assistant*
rmassaquoi@umuc.edu
Phone: 301-985-4616

Program Directors

Applied Computer Systems
vacant

Database Systems and Security
Garth R. MacKenzie, *Program Director*
gmackenzie@umuc.edu

Information Resources Management
Paul F.G. Keller, *Program Director*
pkeller@umuc.edu

Software Development Management
Hasan Sayani, *Program Director*
hsayani@umuc.edu

Program Coordinators
Kimberly Chung, *Academic Coordinator*
kchung@umuc.edu

Steven Kerby, *Distance Education Coordinator*
skerby@umuc.edu

Interested students should call either an IRMC or a Graduate School advisor.

Admission Requirements

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

Degree Status

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

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

Degree status is granted to students in the Applied Computer Systems track who meet or exceed the above criteria and, in addition, have at least one undergraduate semester of calculus (that is, Calculus I) completed with a minimum grade of “C” or equivalent proficiency demonstrated by means of a College Level Examination Program (CLEP) test. Database Systems and Security track students must have an undergraduate course in statistics.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 26) for information about the TOEFL and TWE examinations.

Provisional Status

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

Decision-Pending Status

The decision-pending status is short term and is meant for students who have not completed the admission process described

previously. Students are encouraged to enroll in one of the following graduate courses before UMUC has received the official college transcript from the bachelor’s-degree-granting institution: CSMN 601, TMAN 612, or TMAN 632. Students must receive an admission decision before subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

Certificate Program

The Master of Science in Computer Systems Management program has 6 certificates related to this discipline. See page 112 for more information.

Locations

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

Core Courses

CSMN 601 3 credits

Issues, Trends, and Strategies for Computer Systems Management

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

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

TMAN 612 3 credits

Financial Management for Technology Managers

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

TMAN 614 3 credits

Strategic Management of Technology and Innovation

For a full description of this course, see page 73. Replaces ADMN 603.

TMAN 632 3 credits

Organizational Performance Management

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

CSMN 660 3 credits

Seminar in Managerial Decision Making for Computer Systems Management

This course is the capstone of the CSMN program. It integrates the major concepts presented in all other coursework through study of the major threads that tie together all aspects of information technology in an organization. Strong emphasis is placed on viewing information technology issues in a context of making day-to-day as well as strategic management decisions based on applied research. Issues include competitive strategy, architectures, user communities, technology transfer, reengineering, collaborative computing, global technology, social impact, information policy, ethics, and the future of the Internet. Emerging trends in information technology are analyzed to understand their potential effect on the workplace and society.

Prerequisites: 27 semester hours of graduate coursework.

Elective Courses

Students must select two elective courses from CSMN specialty tracks, TLMN, TMAN, ADMN 645, or CSMN 639.

CSMN 639 3 credits

Multimedia and the Internet

Multimedia presentations are regarded as essential, strategic components of an organization’s competitive advantage via its World Wide Web presence. Established principles of software development life cycles, aesthetics of typography and layout, benchmarking, and human factors research are applied to analyzing and critiquing Web sites as well as writing successful Web site development plans. Site management issues

and consumer research methods are surveyed. The course's technical component emphasizes 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.

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

End-of-Program Option

Management Project

CSMN 690 **3 credits**
and CSMN 690M **1 credit**

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

Prerequisite: CSMN 660.

Two-Course Option

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

Interdisciplinary/Breadth Courses (Select one)

- | | |
|----------|--|
| ADMN 625 | Organizational Communication and Group Development |
| IMAN 601 | Strategic Management in a Global Environment |
| IMAN 625 | International Trade and Trade Policy |

- | | |
|-----------|---|
| IMAN 635 | The Public Sector in International Commerce |
| IMAN 661* | Area Studies: Business Strategies for Europe |
| TMAN 633 | Human Resource Issues in Technology-Based Organizations |

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

** Includes a trip to Europe.*

Elective/Depth Courses

Students should select courses from any other CSMN track or from TLMN (except TLMN 660).

Applied Computer Systems Track (ACS)

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

Track students must take the following four courses:

CSMN 615 **3 credits**
Hardware and Operating Systems

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

CSMN 616 **3 credits**

Distributed Computing

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

Prerequisite: Calculus I or equivalent.

CSMN 617 **3 credits**

Principles of Programming Languages

The course explores the theory and implementation of modern programming languages. Topics include the attributes of a good language, programming environments (for example, batch, interactive, real-time, network, and embedded systems), language syntax, various grammar types, data types, object-oriented structures, sequence control, subprogram control, and parallel programming. The properties of programming languages are illustrated using examples from current languages such as Fortran, Cobol, C, C++, Pascal, Ada, Prolog, and Java.

Prerequisite: Calculus I or equivalent.

CSMN 618 **3 credits**

Knowledge-Based Systems

This course covers the identification, creation, and use of knowledge-based systems from an applied approach. Cognitive science, formal logic, and finite automata are highlighted throughout. The course starts with an overview of intelligent systems and concludes with a hands-on intelligent system created as a class product. Using the case-study approach, the course explores the art of knowledge acquisition and crafting of domain-specific, knowledge-based applications using various processing technologies with representation methods.

Prerequisite: Calculus I or equivalent.

Database Systems and Security Track (DSS)

The Database Systems and Security track provides practical, appropriate, and effective

applications of database technology. This track presents the nature and characteristics of database management, database modeling, database design, and database implementation, with related security and reliability issues. This track is intended for knowledge workers and business professionals interested in designing, implementing, and maintaining database systems for today and tomorrow.

Track students must take the following four courses:

CSMN 655 **3 credits**
Information Risk Assessment and Security Management

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

CSMN 656 **3 credits**
Database Processing and Design

The purpose of this course is to introduce the fundamental concepts necessary for the design, use, and implementation of 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 database systems. The course covers the relational network, hierarchical data models, and in-depth presentation of the entity-relation (ER) model. Semantic, object-oriented, and functional data modeling concepts are also included. Various database design techniques, implementation concepts, and techniques for query optimization, concurrency control, recovery, security, and integrity are investigated.

CSMN 657 **3 credits**
Advanced Database Applications

A substantial body of proven concepts is covered, such as data abstraction, encapsulation, inheritance, polymorphism, extensibility, generic programming, information hiding, code reusability, modularity, and exception handling. The course provides students with an overview of existing object-oriented databases (OODB), including examples of their use and comparisons of their strengths and weaknesses. After a survey of OODBs, three representative examples are selected for closer scrutiny. C++ serves as the primary data manipulation language. A brief overview of the language, its power, and its limitations is presented.

Note: Students are strongly encouraged to take CSMN 656 or request permission before taking this course.

CSMN 658 **3 credits**
Software Reliability and Reusability

This course discusses principles of reliability, reusability, initiatives, and standards in software engineering, such as function point as a measure of complexity and, hence, reliability. The course provides an overview of software reliability models, software fault-tree analysis, types of software errors, types of design errors, and inherent characteristics of software that determine reliability. Software redundancy, automating tools for software reliability prototypes, and real-time software reliability are also covered.

Information Resources Management Track (IRM)

The Information Resources Management track is concerned with the combination of computing, telecommunications, office automation, records management, and newer technologies such as multimedia and document imaging. The IRM track is intended for federal ADP management and acquisitions personnel as well as those who work in the private sector. Because various agencies differ in their interpretation of IRM, the track has a great deal of flexibility, allowing students to tailor it to their specific needs.

Track students must take the following three courses plus one elective from the approved degree program.

CSMN 635 **3 credits**
Systems Development and Project Control

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

CSMN 636 **3 credits**
Telecommunications and Connectivity

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

CSMN 637 **3 credits**
Acquisition of Information Technology

This course explores in detail the principles of information technology (IT) acquisition in a life-cycle context, taking into account best practices in commercial firms and government agencies. Emphasis is placed on the process of determining the relative value and priority of proposed IT acquisition projects, ongoing IT acquisition projects,

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

Plus one elective:

One course (3 credits) chosen from TMAN, TLMN, another CSMN track, or ADMN 645.

Individual course prerequisites apply.

Software Development Management Track (SDM)

The Software Development Management track is designed for software development professionals and technical managers who are interested in the entire software life-cycle process. These courses are also part of the MSWE program, and they include both formal and "real life" descriptions of software requirements, development, validation, and maintenance concepts. This track provides the technical knowledge to complement the management concepts contained in the CSMN core courses.

Track students must take the following four courses:

MSWE 645 **3 credits**
System and Software Standards and Requirements

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

MSWE 646 **3 credits**
Software Design and Implementation

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

MSWE 647 **3 credits**
Software Verification and Validation

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

MSWE 648 **3 credits**
Software Maintenance

For a full description of this course, see page 84.



Master of Science in Electronic Commerce (E-Commerce)*

The Master of Science in Electronic Commerce degree program introduces participants to the critical competencies and skills needed to effectively identify, develop, and implement e-commerce business strategies in various types of organizations. These competencies and skills are developed using several key themes incorporated throughout the program in the core curriculum, which consists of: Technology-Driven Change; Dynamic Innovation and Creativity; Globalization of Commerce; Ethics, Social Responsibility, and Cultural Sensitivity; and Integrative Systems Thinking and Practice.

These themes are continually reinforced in the core courses. They form the basis of lectures, readings, exercises and graded assignments, individual and group projects, cases, and discussions.

* Program pending approval

Program Director

Robert Ouellette, *Program Director*
rouellette@umuc.edu

Fran Baldwin, *Administrative Assistant*
fbaldwin@umuc.edu
Phone: 301-985-7824

Degree Program

The program leads to the degree of Master of Science in Electronic Commerce. It consists of nine core courses, including a capstone course, and three elective courses for a total of 36 credits. The three elective courses can be selected from existing UMUC graduate courses.

Master's degree students at UMUC may seek approval to have up to 6 credits of transfer course work count toward the fulfillment of degree requirements. Up to 6 graduate transfer credits may be used to satisfy the core requirements, or up to 6 undergraduate transfer credits may be used to satisfy electives. All transfer credit must be approved by the Graduate School.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP

610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

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

Degree Status

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

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 26) for information about the TOEFL and TWE examinations.

Provisional Status

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

Decision-Pending Classification

Decision-pending classification is short term and is meant for students who have not completed the admission process described previously. Students may enroll in one of the following graduate courses before UMUC has received the official college transcript from the bachelor's-degree-granting institution: ECOM 647, ECOM 640, or ECOM 620. Students must receive an admission decision before subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

Certificate Program

The Master of Science in E-Commerce program has a certificate related to this discipline. See page 110 for more information.

Core Courses

CSMN 655 3 credits

Information Risk Assessment and Security Management

See page 48 for a complete description of this course.

ECOM 610 3 credits

Introduction to E-Commerce

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

electronic payment systems and security, Web access to databases, ERP and CRM software, and EC servers.

ECOM 620 3 credits

E-Marketing

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 640 3 credits

Internet Principles and Applications

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

ECOM 660 3 credits

E-Commerce Financial Management and Accounting

This course focuses on evaluating e-commerce/information technology investments being considered by an organization. The time value of money,

discounting techniques, and option pricing principles are applied to EC investment opportunities in a strategic context. Additional topics covered include financial management processes and activities significantly affected by the implementation of EC technologies in organizations, such as accounting systems design, activity based management applications, risk management as it pertains to internal controls, and the use of intelligent agents.

ECOM 670 3 credits

Social, Legal, Ethical, and Regulatory Issues

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

ECOM 680 3 credits

E-Commerce Application Software

This course examines application software for business-to-business and business-to-consumer e-commerce (EC). Initially studied are several fundamental EC application software tools including programming languages (for example, Java, Perl/cgi-bin), search engines, and Web authoring tools (for example, HTML, HTTP, and XML). Also studied are transaction processing software tools including intelligent agents and protocols such as ANSI X12. Specific business-to-business transaction exchange methods reviewed include Electronic Data Interchange (EDI) and Electronic Funds Transfer (EFT).

ECOM 690 3 credits

E-Commerce Capstone

The capstone course integrates all the knowledge accumulated through the previous courses. The class focuses on best

practices as demonstrated through case studies. Working in teams, students develop a comprehensive business plan or a market plan for a new Internet venture with a real company. This course also integrates cross-cutting issues such as learning organization,

the changing nature of work, entrepreneurship/intrapreneurship, technology trends, communication, creativity, and innovation.

Students may enroll in this class only after completing at least 27 of the required 36 credits.

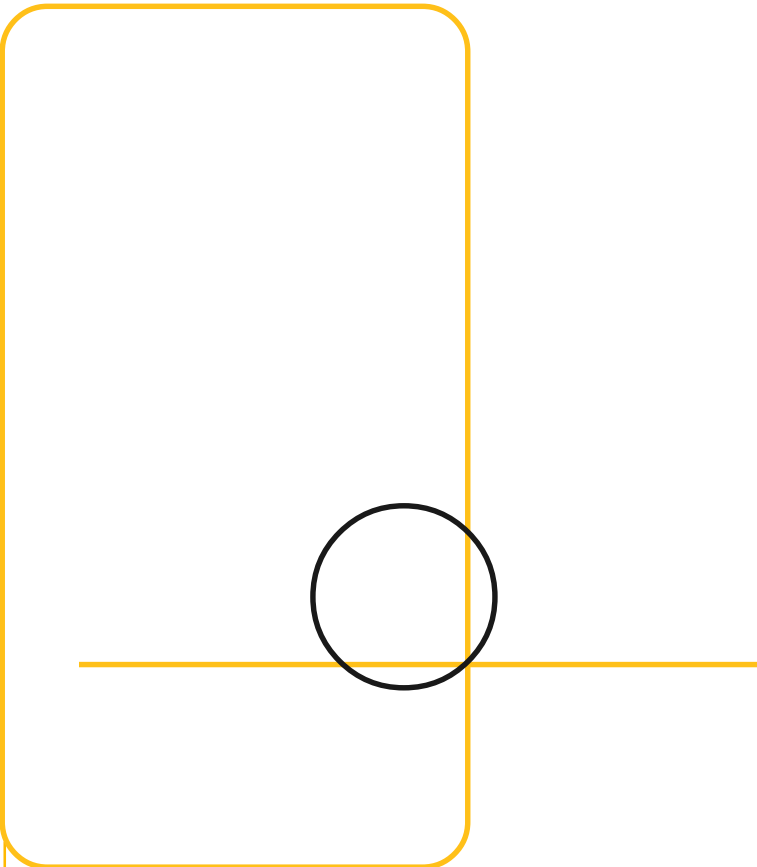
TLMN 636

3 credits

Internet Principles and Applications

See page 80 for a complete description of this course.

Note: Electives are chosen from existing UMUC graduate courses.



Master of Science in Environmental Management

The Master of Science in Environmental Management is designed to provide the skills, knowledge, and competencies that students will need to function effectively in multiple environmental management settings. The courses in the program are interrelated and provide a solid conceptual and applied foundation. An applicant is required to have at least 3 undergraduate credits each in basic biology and chemistry.

Department Chair

John O. Aje, *Chair*
jaje@umuc.edu

Fran Baldwin, *Administrative Assistant*
fbaldwin@umuc.edu
Phone: 301-985-7824

Program Director

Robert G. Beauchamp, *Program Director*
rbeauchamp@umuc.edu

Degree Program

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

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

A student may be admitted in one of four classifications: degree-seeking, provisional, certificate, or decision pending. The

decision-pending classification is temporary while students await final approval of admission. The admission requirements for each classification are explained below.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited university in social science, physical science, biological science, or engineering; a minimum of 6 semester hours of coursework in chemistry and biology; a minimum of one year of experience or other evidence of expertise in the environmental field; an undergraduate GPA of 3.0 on a 4.0 scale; submission of the official transcript from the bachelor's-degree-granting institution; and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 26) for information about the TOEFL and TWE examinations.

Provisional Status

Provisional status may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits and remedy any other unmet admission requirements are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university in social science, physical science, biological science, or engineering; a minimum of 3 semester hours of coursework each in chemistry and biology; a minimum of one year of experience or other evidence of expertise in the environmental field; an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study; submission of the official transcript

from the bachelor's-degree-granting institution; and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Students who have not completed 6 semester hours of combined coursework in chemistry and biology may be admitted to provisional status while completing this requirement. They will be allowed to register for a maximum of three courses chosen from the following list while completing the requirement in chemistry and biology: ENGM 610, TMAN 640, ENVM 641, ENVM 643, or ENVM 646.

Decision-Pending Classification

Decision-pending classification is short term and is meant for students who have not completed the admission process described previously. Students may enroll in one of the following graduate courses before UMUC has received the official college transcript from the bachelor's-degree-granting institution: ENVM 646, ENVM 648, or TMAN 640. Students must receive an admission decision before subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts. Certificate Program The Master of Science in Environmental Management program has a certificate related to this discipline. See page 114 for more information.

Locations

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

Course Requirements

ENVM 648 Fundamentals of Environmental Systems is a required course for students lacking an undergraduate degree in science or engineering and one year of experience in the environmental field. ENVM 648 Fundamental of Environ-

mental Systems (if required) and ENVM 646 Environmental Law and Policy Development must be among the first four courses taken by new students admitted into the program.

Core Courses

ENGM 610 3 credits

Engineering Economics and Financial Analysis

Concepts and processes for allocating resources and maintaining managerial control in engineering organizations are examined. Methods of evaluation, reporting, and managerial control of development and operating systems are emphasized. Principles and methods for economic and financial analysis of engineering systems (including capital investment, rate of return, and financing alternatives) are studied. Concepts such as make or buy, incremental and sunk costs, and financial reporting are presented. Methods of collecting, reporting, and analyzing financial information are examined.

TMAN 640 3 credits

Project Management

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

ENVM 641 3 credits

Environmental Auditing

Methods for attaining statutory, regulatory, and permitting compliance are examined. The protection of workers and other stakeholders is also examined in the context of organizational, budgetary, and other constraints. Methods of defining auditing objectives to meet organizational goals and of designing auditing programs for effective compliance under each of the 12 major environmental statutes—including air, water, solid and hazard waste management laws, and pollution prevention initiatives—are emphasized.

ENVM 643 3 credits

Environmental Communication and Reporting

The range of communication practices required for environmental managers in the fulfillment of legal, regulatory, ethical, and

organizational responsibilities is examined. The various populations with whom environmental managers must communicate and interact are identified and examined, including plant supervisors, corporate executives, regulators, the legal community, civic groups, labor unions, and the media. The types of communication discussed range from decision memoranda to environmental impact statements, presentations of corporate environmental policies before affected communities, and development/conveyance of technical evidence for obtaining permit variances.

ENVM 646 3 credits

Environmental Law and Policy

Development U.S. environmental law and policy, including its development, implementation, and enforcement, are examined. The environmental movement, since its early beginnings, is examined with emphasis placed on developments and changes during the last 25 years. Issues to be covered include air pollution, water pollution, hazardous waste, and toxic substances. Legislative, executive, and judicial perspectives and the roles and impacts these institutions have made on environmental law and policy are analyzed. Specific laws and their ensuing policies addressed include the following: National Environmental Protection Act; Clean Water Act; Clean Air Act; Comprehensive Environmental Response, Compensation, and Liability Act; Resource Conservation and Recovery Act; and Toxic Substances Control Act.

ENVM 647 3 credits

Environmental Risk Assessment

This course is designed to acquaint managers with the basic concepts of risk assessment. It examines the four core parts of a risk assessment as denoted by the National Academy of Sciences: hazard assessment, dose-response assessment, exposure assessment, and risk characterization. Methods of measurement and modeling are discussed, along with an exploration of key questions concerning uncertainty.

Differences in the risk characterizations of substances under different use conditions and legal requirements are studied. Significant case studies serve to illustrate the assessment process.

ENVM 670 3 credits

Seminar in Environmental Management (Same as TMAN 671.)

Electives

Students must choose four of the following courses for a total of 12 credits:

ENVM 644 3 credits

New Technologies in Environmental Management

An overview is offered of new waste management and waste minimization technologies, including treatment technologies such as physical and chemical treatment of hazardous wastes, bioreactors and bioremediation, and reverse osmosis and ultrafiltration. Disposal technologies are reviewed, such as landfill design and operation, incineration, and encapsulation methods. Pollution prevention technologies are also presented, including process redesign and computer-aided process control, as well as the substitution of toxic materials.

ENVM 645 3 credits

Hazardous Material Transportation

This course offers a review of the legal, regulatory, and operational requirements for the transport of hazardous materials and hazardous waste. A foundation is provided for understanding the state, federal, and international regulatory framework that governs the transport of such materials. The identification, classification, and description of transported materials (according to U.S. Department of Transportation criteria) is presented. The course includes the evaluation of shipment alternatives, such as the use of common carriers, contract carriage, and private carriage; compliance with shipping requirements, including the selection of appropriate packaging, labeling, and placarding; and the provision of emergency response support.

ENVM 648 3 credits

Fundamentals of Environmental Systems

The basic concepts of environmental chemistry, physics, geology, and risk are introduced. Environmental systems are presented in the study of the gaseous, liquid, and solid effluents from various industrial activities, while management methods and the statutory and regulatory requirements of major federal environmental laws affecting this management are considered. Additionally, this course provides the student with the basic vocabulary of the field and an understanding of fundamental principles relating to the transport and fate of contaminants and industrial wastes.

Note: This course is intended for students lacking a strong science background or experience in the environmental field.

ENVM 649 3 credits

Principles of Waste Management and Pollution Control

This course introduces the student to various methods of waste management including waste collection, transportation, recycling, treatment and disposal, and environmental monitoring. The course also focuses on hazardous and municipal solid waste, pollution prevention techniques, and waste minimization. An introduction to the process of disposal-facility site selection, design, and operation is also included.

ENVM 650 3 credits

Land and Water Resource Management

This course introduces the student to the development of multiple-use resource management strategies and the role of public policy in land and water resource management. Free markets, market failure, and distributional equity issues are examined. The Public Trust Doctrine, Native American Trust responsibilities, and land use regulations are also examined. 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 3 credits

Watershed Planning and Management

This course introduces students to the concepts of watershed management and the development of watershed-related management planning documents. The course examines the physical characteristics of watersheds and their role in maintaining healthy environments and providing a natural resource to society. The course also focuses on examining management techniques for the conservation and maintenance of watersheds.

ENVM 652 3 credits

Principles of Air Quality Management

This course presents management techniques for addressing air quality issues and managing air quality programs. The course focuses on air pollution law; air pollutants and their sources; effects of air pollution on health and welfare; sampling and analysis of air pollutants; standards, regulations, and enforcement systems; and quality assurance principles.

ENVM 653 3 credits

Air Pollution Sources and Controls

This course presents a broad overview of major air pollution sources and controls. The course examines the various contributing pollutants, sources and effects of pollutants, and dispersion and control of pollutants. Particulate and gas control systems are examined. Guides to the application of dispersion models are introduced. The course also highlights the legal and regulatory issues associated with implementing and maintaining air quality standards.

End-of-Program Option

Management Project

ENVM 690

and ENVM 690M 3 credits

Students must demonstrate their ability to structure and complete a major project that identifies and resolves an important management or organizational issue. Results of their efforts are reported in written and oral form. The project may be developed in cooperation with the student's current

employer or with some other organization of the student's choice, provided there is no conflict of interest. The project is conducted under the direction of an on-site supervisor in cooperation with a faculty advisor. Students have two semesters to complete the management project.

Prerequisites: Completion of 30 semester hours of graduate coursework and ENVM 670.

Two-Course Option 6 credits

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

Interdisciplinary/Breadth Courses (select one)

- ADMN 625 Organizational Communication
- ADMN 628 Contract Pricing and Negotiation
- IMAN 615 Foreign Investments and Strategic Alliances

- IMAN 661* Area Studies: Business Strategies for Europe
- TMAN 632 Management of Productivity and Quality in Technological Operations
- TMAN 633 Human Resource Issues in Technology-Based Organizations

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

*Includes a trip to Europe.

Elective/Depth Courses

Students may choose any other elective in the ENVM program.

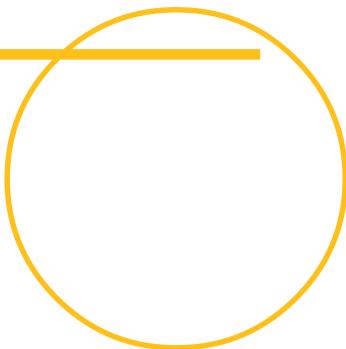
Environmental Business Concentration

The Environmental Management Program, in lieu of four environmental electives, is offering the following cluster of four

TMAN courses as electives for a concentration in environmental business:

- TMAN 613 Marketing Technology-Based Products and Services
- TMAN 614 Strategic Management of Technology and Innovation
- TMAN 632 Management of Productivity and Innovation
- TMAN 633 Human Resources Issues in Technology-Based Organizations

For students who choose to take the cluster of business/management courses and do not possess an undergraduate degree in science or engineering and at least one year of environmental experience must register for ENVM 648 Fundamentals of Environmental Systems early on in their program. This choice will result in a program consisting of a minimum of 39 semester hours including a management project. Students choosing the two-course option would be required to complete 41 semester hours.



Master of Science in Information Technology

Proposed for Fall 2000: The Master of Science in Information Technology (MSIT) 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 MSIT program will have a broad technical understanding of current and emerging technologies in the IT field, a familiarity with systems engineering concepts, and a solid foundation in the technological basis of the Internet. They will also have a firm grasp of current and future effects of the convergence of computer systems and telecommunications systems technologies.

(See also the Executive Master's Program in Information Technology. This program is offered in an accelerated seminar format with Saturday classes.)

Degree Programs

The program leads to the degree of Master of Science in Information Technology. The curriculum is 36 credits in length and is divided into a 21-credit core and 15 credits of electives. The core curriculum consists of seven broad-based courses in basic technology, computing, software, telecommunications, systems engineering, and the Internet, as well as a capstone course on information technology integration and applications. Students may fulfill the elective component of the curriculum in one of two ways, depending upon their individual needs and the demands of the work situations: they may select 15 credits of coursework from the entire range of existing UMUC information technology courses in order to gain an interdisciplinary perspective, or they may take a sequenced series of courses within one of the specialized sub-disciplines or course groups. Certain management electives are also available for students who may be on the management track in their organizations.

Additional information on the MSIT program will become available before the fall 2000 semester. As information becomes

available, it will be posted at <http://umuc.edu/gsmi/msit.html>.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

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

Degree Status

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

Department Chair

Information and Telecommunication Studies

John M. Richardson, *Chair*
jrichardson@umuc.edu

Regina Massaquoi, *Administrative Assistant*
rmassaquoi@umuc.edu
Phone: 301-985-4616

Program Director

Information and Telecommunication Studies

Donald L. Goff, *Program Director*
dgoff@umuc.edu
Phone: 301-985-6084

Coordinators

Kimberly Chung, *Academic Coordinator*
kchung@umuc.edu

Steven Kerby, *Distance Education Coordinator*
skerby@umuc.edu

ited university in one of the engineering, physical science, or mathematical disciplines, as well as substantive practical experience in information technology (IT); an undergraduate GPA of 3.0 on a 4.0 scale; submission of the official transcript from the bachelor's-degree-granting institution; and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 26) for information about the TOEFL and TWE examinations.

Provisional Status

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

of the 9 credits and remedy any other unmet admission requirements are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university in physical science, mathematics, or engineering; a minimum of 3 semester hours of coursework each in chemistry and biology; a minimum of one year of experience or other evidence of expertise in the environmental field; an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study; submission of the official transcript from the bachelor's-degree-granting institution; and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

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

Decision-Pending Classification

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

Core Courses

The following seven courses were still in development at time of printing.

MSIT 610 3 credits

Foundations of Information Technology

This course lays a common foundation for use in all other courses in the program. Its goal is to impart an understanding of how the many elements that make up information technology work and what their limitations are. The course reviews mathematical and physical concepts helpful in

thinking about the capabilities of information technology and its applications. Mathematical concepts include information theory, the representation of signals in both the time and frequency domains, modulation schemes, digitization, and probability. Physical concepts include electromagnetic waves, the properties of various guided and unguided transmission media, integrated circuits, lasers, and optical transmission and switching. The course also introduces concepts essential to information security applications, such as various encryption schemes and measures for assuring personnel and physical security. Insofar as possible, these concepts will be treated descriptively rather than analytically.

MSIT 620 3 credits

Computer Concepts

This course examines the major hardware and system software components and underlying technologies that are the basis of the modern digital computer. Major developments in the evolution of computers are reviewed first; theoretical and engineering topics include Boolean logic, the Von Neumann architecture, and semiconductor device technology. The similarities and differences between mainframes, minicomputers, and microprocessors are then investigated. Supercomputer, parallel processor, and distributed system architectures are examined. Various types of storage media and input/output devices are discussed. An overview of system software elements, including operating systems and middleware, is also presented. The course concludes by introducing the student to advanced topics such as optical computers and biomolecular computers.

MSIT 630 3 credits

Concepts in Software-Intensive Systems

This course examines the technology, engineering practices, and business economics behind the wide variety of modern software-intensive systems. The foundations of software engineering are examined. Classes of application domains including real-time systems and transaction-based

systems are analyzed. The practices used in developing small-scale and large-scale software systems are evaluated. Modern issues including design of the human-computer interface, software product liability, and certification of software engineers are discussed. The course concludes by investigating the structure, environment, and possible future of the software industry.

MSIT 640 3 credits

Data Communications and Networks

The course begins with a study of data communication fundamentals. These include digital and analog signals; modulation; circuit and packet switching; multiple access schemes such as Frequency Division Multiple Access (FDMA), Time Division Multiple Access (TDMA) and Code Division Multiple Access (CDMA); and telecommunication standards such as the Open System Interconnect (OSI) Model. The course then moves to telecommunication networks with a review of Local Area Networks (LANs) including topologies; contention access methods; and inter-networking devices such as bridges, routers and gateways. Also covered are Wide Area Networks (WANs) including the Public Switched Telephone Network (PSTN), wireless networks such as cellular, Personal Communication Systems, and wireless data; the Integrated Services Digital Network (ISDN); X.25; Frame Relay; and Asynchronous Transfer Mode (ATM). Finally, the course examines the network convergence issue; that is, one network for data, voice, images, and video.

MSIT 650 3 credits

Systems Engineering

Systems Engineering is an interdisciplinary approach to developing complex systems that satisfy a client mission in an operational environment. Information technology is at the heart of most systems. This course is an examination of the systems engineering process with special emphasis on computers and software systems. The course includes an overview of system theory and structures, elements of the systems life cycle (including systems

design and development), risk and trade-off analyses, modeling and simulation, and the tools needed to analyze and support the systems process. Case studies from the information technology domain will be used to illustrate the systems engineering principles.

MSIT 660 3 credits

Internet Principles and Applications

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), and Internet security and authentication (for example, firewalls, encryption, and virtual private networks), Internet 2, and IPV.6. The second part of the course reviews Internet applications and its 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.

ITSM 670 3 credits

Information Technology (capstone)

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

Elective Courses

Students may select from the following courses to fulfill the elective requirement:

Computer Systems Group

CSMN 615 3 credits

Hardware and Operating Systems

For a full description of this course, see page 47.

CSMN 616 3 credits

Distributed Computing

For a full description of this course, see page 47.

CSMN 617 3 credits

Principles of Programming Languages

For a full description of this course, see page 47.

CSMN 618 3 credits

Knowledge-Based Systems

For a full description of this course, see page 47.

Software Systems Group

MSWE 635 3 credits

Software Development

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

MSWE 645 3 credits

Systems and Software Standards and Requirements

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

MSWE 646 3 credits

Software Design and Implementation

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

MSWE 647 3 credits

Software Verification and Validation

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

MSWE 648 3 credits

Software Maintenance

For a full description of this course, see page 84.

CSMN 658 3 credits

Software Reliability and Reusability

For a full description of this course, see page 48.

Database Group

CSMN 656 3 credits

Database Processing and Design

For a full description of this course, see page 48.

CSMN 657 3 credits

Advanced Database Applications

For a full description of this course, see page 48.

Telecommunications Group

TLMN 620 3 credits

Local Area Networking Systems

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

TLMN 625 3 credits

Wide Area Network Systems

For a full description of this course, see page 80.

TLMN 641 3 credits

Network Management and Design

For a full description of this course, see page 80.

TLMN 645 3 credits

Wireless Telecommunications Systems

For a full description of this course, see page 80.

Special Topics

CSMN 637 3 credits

Acquisition of Information Technology

For a full description of this course, see page 48.

CSMN 639 3 credits

Multimedia and the Internet

For a full description of this course, see page 46.

CSMN 655 3 credits

Information Security

For a full description of this course, see page 48.

MSIT 699* 3 credits

Current Trends in Information Technology

*Course still in development.

Information Technology Management Group

TMAN 612 3 credits

Financial Management for Technology Managers

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

TMAN 614 3 credits

Strategic Management of Technology and Innovation

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

TMAN 633 **3 credits**

**Human Resource Issues in
Technology-Based Organizations**

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

TMAN 640 **3 credits**

Project Management

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

The following undergraduate courses are also eligible for graduate credit as electives:

- IFSM 498D Data Mining
- IFSM 498N Disaster Recovery
 Planning
- IFSM 498S Issues in Computer
 Technology
- IFSM 498U Rapid Application
 Prototyping
- IFSM 498V Health Information
 Systems Management



Master of Science in Management

This program is designed for professionals who, as they assume increasing responsibility within their organizations, find that the basis for success has shifted from technological expertise to the knowledge and skills necessary to manage human resources. Important topics covered in the required courses include methods and conduct of organizational assessments, the organization/environment relationship, strategic planning, organizational communication, budgeting and resource allocation, leadership, and organizational decision making. Throughout the curriculum, major emphasis is placed on the effects of rapid technological change on organizations and administrative processes and the consequent ethical and moral responsibilities of managers to society at large.

Note: This catalog applies to students who begin their M.S. program in fall 1999 or later. MGA students who began their program before fall 1998 should refer to their catalog for the courses they need to complete for their degree. Students should contact their academic advisor if they have any questions. All students are responsible for determining their degree requirements and completing them.

Degree Program

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

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

A student may be admitted in one of four classifications: degree seeking, provisional, certificate, or decision pending. The

decision-pending classification is temporary while students await final approval of admission. The admission requirements for each classification are explained in the following sections.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited university or college; an overall undergraduate GPA of at least 3.0 on a 4.0 scale, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. Additional requirements for the Accounting track are listed on page 64.

The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 26) for information about the TOEFL and TWE examinations.

Department Chair

Master of Science in Management

Michael Frank, *Chair*
mfrank@umuc.edu

Associate Chair

Theresa Marron-Grotsky, *Associate Chair*
tmarron-grotsky@umuc.edu

Wendy Adams, *Administrative Assistant*
wadams@umuc.edu
Phone: 301-985-7029

Meena Bipat, *Administrative Assistant*
mbipat@umuc.edu
Phone: 301-985-7710

Program Directors

Master of Business Administration

Michael Evanchik, *Program Director*
mevanchik@umuc.edu

Joyce Shirazi, *Program Director*
jshirazi@umuc.edu

Accounting

James Howard, *Program Director*
jhoward@umuc.edu

Financial Management

Edward Shafer, *Program Director*
eshafer@umuc.edu

Health Care Administration

Kathleen F. Edwards, *Program Director*
kedwards@umuc.edu

Diane Bartoo, *Program Director*
dbartoo@umuc.edu

Human Resource Management

Glenda J. Barrett, *Program Director*
gbarrett@umuc.edu

Interdisciplinary Studies in Management

James P. Gelatt, *Program Director*
jgelatt@umuc.edu

Marketing

Theresa Marron-Grotsky, *Program Director*
tmarron-grotsky@umuc.edu

Management Information Systems

Alan Carswell, *Program Director*
acarswell@umuc.edu

Not-for-Profit Management

Ted Field, *Program Director*
rfield@umuc.edu

Procurement and Contract Management

Emmett Fleming, *Program Director*
efleming@umuc.edu

Coordinators

General Management Program

Andie DiMarco, *Academic Coordinator*
adimarco@umuc.edu

General Management Programs and International Management

Pat Johnson, *Distance Education Coordinator*
pjohnson@umuc.edu

Irina Ryland, *Academic Coordinator*
iryland@umuc.edu

Debbie Schroeder, *Distance Education Coordinator*
dschroeder@umuc.edu

Provisional Status

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

Decision-Pending Classification

The decision-pending classification is short term and is meant for students who have not completed the admission process previously described. Students may enroll in one of the following graduate courses before UMUC has received the official transcript from the bachelor's-degree-granting institution: ADMN 601, ADMN 625, or ADMN 635. Students must receive an admission decision before subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

Certificate Program

The Master of Science in Management program has 12 certificates related to this discipline. See page 110 for more information.

Locations

Classes in the M.S. program usually meet in the evening, once a week during the fall and the spring semesters and twice a week

during the summer session. Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations throughout the Washington, D.C. metropolitan area.

Core Courses

ADMN 601 3 credits

The Manager in a Technological Society

This course presents an overview of the fundamental concepts of organizational theory and design in the context of a post-industrial and increasingly global society. Integrated within the study of organizations are several key knowledge areas essential to today's manager: the impact of technological and workforce changes on society, organizational ethics and social responsibility, global issues, history of management thought and its relevance for managers today, and systems thinking and the challenges of managing in today's complex and rapidly changing environment. Course content addresses essential concepts in organizational theory and design, including measuring effectiveness, organizational life cycles, options for organizational structure, and becoming the learning organization. The course provides a knowledge base upon which other core courses build.

ADMN 625 3 credits

Organizational Communication and Group Development

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 630 3 credits

Financial Decision Making for Managers

This course focuses on financial decision making in business, government, and not-for-profit organizations. Emphasis is placed on the application of financial and non-financial 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.

Note: Students are expected to know the materials covered in USCP 620 Financial Accounting and USCP 621 Economics, including the concepts of opportunity cost, the time value of money, financial accounting, and financial analysis. Students may not enroll in both ADMN 630 and ADMN 631. Financial Management track students must enroll in ADMN 631.

ADMN 631 3 credits

Financial Management in Organizations

This course is the core course for students who choose the Financial Management track and for students who wish to take this course in lieu of ADMN 630. It focuses on financial management theory and applications in business, government, and not-for-profit organizations. Basic accounting concepts and their use in financial statement analysis are discussed. Discounted cash flow and rate-of-return analysis are used to evaluate projects. Break-even analysis is employed to measure the impact of changes in volume and costs. An introduction to scenario analysis, short- and

long-term financial management, international finance, and operating budgets and their preparation is provided.

Note: Students may not enroll in both ADMN 630 and ADMN 631. Financial Management track students must enroll in ADMN 631.

ADMN 635 **3 credits**

Organizational Leadership and Decision Making

The overriding theme of this course is that the ability to lead and make decisions in an environment of continual change is crucial for the 21st century. Thus, this course focuses on four aspects of leadership: theory and research, individual and team perspectives, judgment and managerial decision making, and the global environment. Approaches to leadership such as power-influence, situational factors, individual traits, and behaviors are explored, as are various models of decision-making theory. Issues such as the relationship of management to leadership, the value of participative and charismatic leadership, the leader's role in organizational culture and organizational change, and the impact on diversity, are investigated from domestic and international perspectives. The increasing role of teams in organizational life and the ability to apply good judgment to decisions that pertain to supervisory, participatory, and team-leadership principles at appropriate points are discussed.

ADMN 638 **3 credits**

Research Methods for Managers

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

ing 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.

Note: Students will be expected to know the materials covered in USCP 630 Introduction to Research Methods including data collection techniques, presentation of data in tables and charts, basic descriptive statistics, basic probability distributions, normal distribution and sampling distributions, estimation, and hypothesis testing.

ADMN 650 **3 credits**

Organizational Decision Making

This course is a capstone seminar in which the applied behavioral aspects and the impact of the continuous changes affecting post-industrialized 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 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.

Prerequisites: ADMN 601, 603, 625, 630 or 631, 635, and 638.

Note: ADMN 650 is open only to students who have already completed ADMN 603. Students who have taken ADMN 603 must take ADMN 650; all other students are required to take ADMN 651.

ADMN 651 **3 credits**

Capstone

This is the capstone seminar, which investigates how strategy interacts with and guides an organization within its internal and external environments. Emphasis is on corporate and business unit level strategy, strategy development, strategy implementation, and the overall strategic management process. Key elements examined include organizational mission, vision, goal setting, environmental assessment, and strategic decision making. Techniques such as industry analysis, competitive analysis, and portfolio analysis are presented. Strategic implementation as it relates to organizational structure, policy, leadership, and evaluation issues is covered. The desired outcome is to improve the student's ability to "think strategically" and to weigh things from the perspective of the total enterprise operating in an increasingly global market environment. In addition to integrating prior core content areas through case analysis and text material, the course will give students familiarity with the problems and issues of strategy formulation through their participation in the Business Strategy Game simulation.

Prerequisites: Completion of 30 credit hours, including all core courses.

End-of-Program Option

ADMN 690 **3 credits**
and ADMN 690M **1 credit**

Management Project

Students demonstrate their ability to structure and complete a major project that identifies and resolves an important management or organizational issue. Students report the results of their efforts in written and oral form. The project may be developed in cooperation with students' current employers or with some organization of their choice, provided there is no conflict of interest. The project is conducted under the direction of an on-site supervisor in cooperation with a faculty advisor. Students have two semesters within the 7-year time limit to complete the management project.

Prerequisites: Completion of ADMN 651.

Two-Course Option 6 credits

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

Interdisciplinary/Breadth Courses (select one)*

- IMAN 601 Strategic Management in a Global Environment
- IMAN 625 International Trade and Trade Policy
- IMAN 630* International Financial Management
- IMAN 635 The Public Sector in International Commerce
- IMAN 640 International Marketing Management
- IMAN 645** The International Legal and Tax Environment
- IMAN 661*** Area Studies: Business Strategies for Europe
- TMAN 640 Project Management
- TMAN 632 Management of Productivity and Quality in Technological Operations (replaces TMAN 665)

**Not open to Financial Management track students.*

***Open to Financial Management track students as depth course, NOT as an interdisciplinary course.*

****IMAN 661 includes a trip to Europe.*

Elective/Depth Courses

Students may take a sixth course in their specialty tracks if there is one. If not, students are to work with their academic advisors to determine the most appropriate course. All elective courses must be approved by academic advisors.

Accounting (ACCT)

The accounting track is designed to satisfy the increased academic requirements to obtain and/or retain licensure in the accounting profession. The scope of the accounting track provides students with greater depth and breadth than accounting

courses taken at the undergraduate level. Coursework will include solving problems and understanding and applying accounting principles as they relate to financial accounting and management accounting theory, the auditing process, accounting information systems, and federal income taxation. In addition, the capstone course in the track synthesizes material from the other track courses while providing a systematic review of basic components of the Certified Public Accountancy (CPA) examination. Mastery of courses in this track coupled with the management coursework for the Master of Science in Management degree represent an applied graduate education for individuals who are part of the accounting profession.

Note: As a prerequisite, this program requires a bachelor's degree in accounting or its equivalent (24 credits in undergraduate accounting).

ACCT 609 3 credits

E-Commerce Accounting

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

ACCT 610 3 credits

Financial Accounting

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

ACCT 611 3 credits

Management Accounting

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

ACCT 612 3 credits

Auditing Process

Generally Accepted Auditing Standards (GAAS), as well as standards for attestation and other services, are examined in depth. Alternative audit models are evaluated for both their practical relevance as well as their theoretical justification as informed by current research and emerging information technology. The use of Computer-Assisted Auditing Techniques (CAAT) and other computer-related technology for obtaining

evidence is evaluated in terms of its effectiveness and suitability in diverse audit environments. Methods of evaluating internal control are considered in light of the risks encountered in new ways of conducting business, such as e-commerce. Professional ethical and legal responsibilities, as shaped by the contemporary professional, legal, and regulatory environments, are examined as they relate to audit risk, risk assessment, and audit program planning. The use of audit reports and other services as tools to support management control and decision-making are considered. Only students enrolled in the Accounting Track may take this course.

ACCT 613 **3 credits**

Federal Income Taxation

Federal Income Taxation is a case-study, problem-oriented examination of fundamental federal income tax concepts. The course will conduct in-depth explorations of tax issues and controversies. The course textbook includes many classic court cases, explanatory materials, and problems that examine the application of the federal tax laws to various taxpayer situations. The primary focus of the course is on *applying* tax laws as opposed to learning individual tax rules. For example, while students might have learned in an undergraduate tax course that gifts are not included in the donee's gross income, students in this course will examine in detail the applicable criteria that determines when an item constitutes a gift. The course stresses methods of case analysis and research that are typically involved in tax planning and litigation. Important definitions, judicially created rules, and other tax conventions are explored in great detail through the study of each one's genesis and purpose. The course examines prime cases and tax issues that concern gross income, identification of the proper taxpayer, deductions, timing, income and deduction characterization, and deferral and capital gains and losses.

ACCT 614 **3 credits**

Accounting Information Systems

This course focuses on the use of information systems in the accounting process with an emphasis on computer systems and

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

ACCT 615 **3 credits**

Capstone Accounting Course

The components of the CPA examination are systematically reviewed as preparation for those who will take the exam. As preparation for work in the accounting field, earlier work is synthesized in the form of an end-of-track capstone project. Prerequisites include all core courses and five of the six remaining accounting track courses.

Prerequisite: All core and other track courses.

Note: Certification Requirements: Since educational requirements to sit for the Uniform CPA Examination differ among states, students planning to take the examination should determine the requirements by contacting the appropriate state board of accountancy. Students seeking information concerning the CPA examination in Maryland can contact their UMUC advisor or the Board of Accountancy for Maryland.

Financial Management Track (FM)

The Financial Management track is intended for people seeking to exercise managerial responsibilities over the financial functions of their organizations, or for those general managers who wish to strengthen their knowledge of and skills in the financial management of their organizations. The following five courses plus ADMN 631 are required for this track: ADMN 632, ADMN 633, ADMN 634, ADMN 639, and ADMN 655.

ADMN 632 **3 credits**

Financial Management of Current Operations

The primary focus of this course is on the financial management of ongoing operations in organizations. Cost-volume profit analysis is extended to cost allocation, operating leverage, make-or-buy decisions, and market and transfer pricing issues. Forecasting and budgeting coverage is expanded to include flexible budgets and sales, manufacturing, purchasing, and cash budgets. The effects of various credit, inventory, accounts payable, and working capital policies on an organization are examined, as are alternate approaches for meeting short-term cash needs and working capital management.

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

ADMN 633 **3 credits**

Long-Term Financing of Organizations

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

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

ADMN 634 **3 credits**

Financial Markets and Investments

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

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

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

ADMN 639 **3 credits**

Multinational Financial Management

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

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

ADMN 655 **3 credits**

Strategic Financial Management

This is an integrative course for the Financial Management track, heavily oriented toward readings, discussion, and case studies and/or simulations using analytical tools developed in the track courses. Current topics reflect the changing environment for and the role of financial management in organizations. Such topics include measuring and implementing economic value added (EVA™); performance-based reward systems; diversification, restructuring, and strategic partnering; business-process reengineering; corporate governance; value-based management; strategic cost management; and ethics in financial management. Within the context of one or more of the topics covered in the course, students are required to analyze and make recommendations concerning a financial problem or opportunity at their workplaces or other approved organizations.

Prerequisites: ADMN 631, 632, 633, 634, and 639.

Note: This course is open only to students in the MSM (FM) track and students in the IMAN (FM) track.

Health Care Administration Track (HCA)

The Health Care Administration track prepares students to assume administrative and managerial positions in health care organizations, including hospitals, nursing and long-term care facilities, managed care organizations (MCOs), and ambulatory care facilities. Though previous experience in health care is not a requirement, all entering students should be familiar with the fundamental values, practices, vocabulary, and basic concepts regarding health services organization and delivery if they are to be successful in this track.

Note: Students must take ADMN 670, ADMN 673, and ADMN 674 plus two other track courses.

ADMN 670* **3 credits**

The Health Care System

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.

ADMN 671 **3 credits**

Public Health Administration

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.

ADMN 672 **3 credits**

Financial Management for Health Care Organizations

This course focuses on the financial management of health care organizations and stresses the basic economic models used in the United States. The course describes the American health care market and the attendant concepts of financial management of health services organizations within that market. The issues of free market and mixed market economies, regulation, licensure, certification, and other barriers to free market economies are examined, as are various insurance mechanisms. In addition, there is extensive discussion of the major financial issues of health care organizations, including reimbursement mechanisms, managed care, capitation, per-case or per-diagnosis payment, how these are packaged by third party-payors, and the effects reimbursement types have on health care provider organizations.

The course also focuses on financial problems and how health care providers should respond to financial problems such as uncompensated care, cost increases, increased competition, and increased regulation. Issues of working capital, capital budgeting and investment in relation to net present value and value added to the organization, health care organizations' ratio analysis, cost analysis, and other financial management techniques of primary importance to health care organizations are discussed.

Note: Students without a knowledge of finance are required to take ADMN 630 or ADMN 631 before enrolling in ADMN 672.

ADMN 673* **3 credits**

Legal Aspects of Health Care Administration

This course deals with the law and legal process as applied to the practice of health care administration. The principles of health care law, with an emphasis on contracts and torts, are discussed. Topics addressed include

legal and regulatory constraints imposed on the health care industry, the liability of health care providers, the rights of patients, labor relations, and administrative law for health care organizations. A variety of pressing bioethical issues facing health care practitioners and administrators are examined.

ADMN 674* **3 credits**

Health Care Institutional Organization and Management

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.

ADMN 675 **3 credits**

Long-Term-Care Administration

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.

**Required courses for HCA students, plus any two of the other track courses.*

ADMN 679 **3 credits**

Special Topics in Health Care Administration

This course is designed to provide students an opportunity to analyze, in depth, current and relevant topics impacting the rapidly evolving health care system. During this exploration of health care administration

content areas, students will be expected to draw upon and incorporate previous general management and health care administration subject material. Specific topics to be further examined include ethics, managed care, intra- and entrepreneurship, health care marketing, the use of technology, psychosocial-behavioral issues as they relate to health care administration, and other industry-relevant topics as determined by the instructor.

Note: Prerequisites for this course are ADMN 630 and ADMN 673.

Human Resource Management Track (HRM)

The Human Resource Management track is designed for managers who want to increase their understanding of the human resource management field. Individuals who intend to become human resource professionals, as well as other managers who plan to supervise staff and need to comprehend the issues, policies, and procedures involved in effectively managing people, will find this program useful. The HRM courses provide the theory, research, knowledge, and procedures used by human resource executives and specialists. Contemporary issues in human resource management such as workforce diversity, employee-management relations, recruitment and selection, training and career development, compensation, organizational development and change, and the impact of globalization on organizations are examined.

Note: HRM students must take ADMN 662 plus four other HRM courses. (ADMN 662 is the recommended first HRM track course.)

ADMN 661 **3 credits**

Employee Relations

This course investigates the rights and responsibilities of employees and organizations in union and non-union environments in the United States. It reviews the legal framework, primarily at the federal level, and discusses strategic fit of the ER program/services within the organization. It explores the current issues involved, such as equal

employment opportunity, privacy, drug testing, wrongful discharge, health and safety, and pension and benefit plans. Public sector and global issues are included.

ADMN 662 **3 credits**

Issues and Practices in Human Resource Management

This introductory course provides an overview of the human resource management profession. It includes the theories, research, and issues related to human resource management within modern organizations. The roles, responsibilities, relationships, functions, and processes of human resource management are discussed from a systems perspective. Expectations of various stakeholders such as government, employees, labor organizations, staff/line management, and executive management are explored. Particular attention is given to the general legal principles and provisions that govern human resource activities. The specialty areas of employee relations, staffing, human resource development, compensation, and organizational development are described. Current topics, such as human resource information systems and globalization, are included.

Note: It is strongly recommended that Human Resource Management students take this course before taking the other courses in the track. This course is required for Human Resource Management students.

ADMN 663 **3 credits**

Job Analysis, Assessment, and Compensation

This course is designed to familiarize the student with the interrelated aspects of human resource management. Topics include job design, job analysis, job evaluation, employee compensation, incentives to productivity, employee motivation, and performance appraisal. A variety of approaches for analyzing, weighing, and specifying the detailed elements of positions within modern organizations are presented. Techniques are discussed for identifying and classifying the critical components of a job, defining the observable standards and measures, preparing and determining the job description and job

worth, establishing equitable compensation for job performance, and developing an executive compensation program. Consideration is given to the interaction of compensation, worker motivation, performance appraisal, and level of worker performance within the organization.

ADMN 664 **3 credits**
Organizational Development and Change

Issues, theories, and methodologies associated with organizational development and the management of change are presented, with a major emphasis on organizational culture and organizational change processes. Areas of concentration include the diagnostic process, intervention strategies, and overcoming resistance to change. Techniques such as goal-setting, team-development procedures, productivity and strategy interventions, and interpersonal-change models are examined.

ADMN 665 **3 credits**
Current Perspectives in Training and Development

This course examines the theories, research, skills, and issues related to one major aspect of human resource development, the management of organizational training services. It discusses the role of training in the workplace and investigates adult learning models. It includes curriculum management, program development, and operation management with an emphasis on design and delivery issues. It considers the impact of technology, the global environment, and modern organizational structures. Ethical issues are discussed. Students develop training proposals or programs to demonstrate knowledge of the concepts.

ADMN 666 **3 credits**
Recruitment and Selection

This course examines the initial phases of staffing, focusing on the hiring process. It investigates the contemporary roles, relationships, and processes of recruitment and selection in the human resource management system. It highlights productivity factors (such as the use of technology) and quality factors (such as legal, ethical,

and validity issues). It includes international as well as domestic concerns and consideration of multiple staffing levels (such as executive managers and temporary employees). Current issues in private, not-for-profit, and/or public sectors are discussed.

Interdisciplinary Studies in Management (ISM)

This course track is intended for students who want a broad exposure to major areas of study that are essential for managers in every organization. Students must select one of the designated courses in each of five clusters:

- International/technology (IMAN 601, IMAN 661, TMAN 640, TMAN 632, or ENGM 615)
- Human resources (ADMN 662, ADMN 663, ADMN 664, ADMN 665, or ADMN 666)
- Legal issues (ADMN 637,* ADMN 661,* ADMN 627, or ADMN 660)
- Marketing (ADMN 685, ADMN 686 or IMAN 640, ADMN 687, ADMN 688 or IMAN 620, or ADMN 689)
- Management information systems (ADMN 640, ADMN 641, ADMN 643, ADMN 644, or ADMN 645)

This track is designed for students who want a general management education but do not want to specialize in either a specific management function or in the management practices of a particular industry.

Note: Students who have taken ADMN 661 should not take ADMN 637 and vice versa.

Management Information Systems Track (MIS)

The Management Information Systems track provides five courses on the ways a manager can use computer-based information systems to enhance decision making and organizational effectiveness. This track is structured to accommodate the needs of students who have little or no experience with computers as well as those with advanced computer skills. In addition to receiving a technological foundation, students are exposed to the interaction of technology, organizational behavior, strategic

planning, project management, and systems analysis to support the organization through its information systems. MIS students are required to take ADMN 641, ADMN 643, ADMN 644, and ADMN 645.

For the remainder of the track, students may take ADMN 640 or any course in the Computer Systems Management or Telecommunications Management area, subject to course prerequisites.

ADMN 640 **3 credits**
Information Systems for Managers

This course is designed for managers without a technical background in computers and information systems. Students review and evaluate different types of hardware and software, and their application in organizations from a systems perspective. Case studies are used to reveal technical and organizational issues, along with operational considerations. Students enrolled in the class are expected to have basic microcomputer skills. The theme of determining managers' needs for information, and procuring and using appropriate computer systems, is emphasized throughout the course.

ADMN 641 **3 credits**
Information Systems Management and Integration

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

ADMN 643 **3 credits**
Systems Analysis and Software Engineering

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 **3 credits**

Decision Support and Expert Systems

This course is designed to provide the student with an understanding of computer applications for management support. In addition to the technologies of decision-support systems and expert systems, the organizational factors leading to the success or failure of such systems are introduced. Other topics addressed include group decision support systems, integration and implementation issues, and related advanced technologies such as neural networks.

ADMN 645 **3 credits**

Information Technology and Competitive Advantage

This course adopts a proactive information management posture by considering the competitive edge with a view toward "business-edge" technologies. Current and upcoming information technologies affecting the developmental, social, political, and economic trends of the industry are explored. The role of the information manager as technology integrator is examined. Local and global influences on the strategic information mission of the organization are highlighted.

Marketing Track (MKT)

The Marketing track focuses on the theories and skills that managers can use to increase the demand for their organizations' products, services, or programs. This track applies to managers who must market products internally in their organizations, to those who market external products, and to marketers of free services as well as those of services with specific charges. Thus, this program applies to students in both the profit and not-for-profit sectors as well as to managers in a highly charged marketing culture. Marketing students must take ADMN 685, ADMN 686, ADMN 687, ADMN 688, and ADMN 689.

ADMN 685 **3 credits**

Strategic Market Planning

This course presents the concepts and techniques for creating and selecting marketing strategies for an organizational unit that survives on its ability to provide products and services to other organizations. This course also discusses trends toward a "marketing culture" in both public and private institutions and the implications that this change has for all managers and administrators. This course concentrates on the role of brand equity in achieving a sustainable competitive advantage.

ADMN 686 **3 credits**

Marketing Management

This course presents theory and practices related to the management of the marketing function as they would be applied by managers and administrators in organizations concerned with "business development." The course relates to the marketing of organizational products, programs, and services to either internal or external clients. Through analysis of case studies and spreadsheet exercises, the necessity of incorporating marketing functions with other business functions is demonstrated. The planning and implementation activities required to attain marketing goals for the organization are also emphasized. Topics addressed include the product/service mix, pricing, marketing communications such as advertising and sales promotion, and channels of distribution. The course also introduces control techniques for the overall marketing mix.

ADMN 687 **3 credits**

Market Segmentation and Penetration

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

ADMN 688 **3 credits**

Marketing Intelligence and Research Systems

Applications of cross cultural marketing research methods and techniques useful to managers and administrators with responsibility for assessing or increasing the demand for their organization's product, programs, and services are presented in this course. Methodologies and special topics related to the design and completion of marketing research projects are presented, including the survey, observational, and experimental methods used in assessing and segmenting markets. Special topics in data analysis that are especially useful for marketing research (that is, focus groups, customer visits, conjoint analysis, and multidimensional scaling) are covered.

Note: It is strongly recommended that students take ADMN 638 before enrolling in this course.

ADMN 689 **3 credits**

Integrated Direct Marketing

This course presents a systematic approach to integrated direct marketing. Integrated direct marketing is a process of precision deployment of multiple media and sales channels (for example, publicity and public relations, advertising, direct mail, telemarketing, and field sales channels) that seeks to maintain contact with the customer at multiple points during the sales cycle and throughout the long-term relationship with the customer. Integrated direct marketing is an information-driven marketing process, managed by database technology that enables the marketers to develop, test, implement, measure, and appropriately modify customized marketing programs and strategies. Specific measurement tools and topics to be examined include life-time value, performance measurement, cost per million (CPM), and cost per response.

Prerequisite: ADMN 638 or appropriate background in statistics is required.

Not-For-Profit Management Track (NFP)

The Not-for-Profit Management track serves the needs of current and potential managers of organizations in the independent sector, including associations, development organizations, foundations, and political organizations. A thorough understanding of the sector is provided, with a special emphasis on revenue generation and cost control issues, legal constraints, recruitment and management of volunteers, and approaches to promotion, marketing, and fundraising. The management of contemporary concerns such as organizational quality, diversity, and ethics is also examined in the context of the not-for-profit organization. NFP students must take the following four courses in this track.

ADMN 654 **3 credits**

Not-For-Profit Financial Management

Theories and practices of not-for-profit financial management and decision making, including budgeting, reporting requirements, nonprofit accounting, and financial standards are studied in detail. The role of financial management in maintaining the fiscal health and legal status of the not-for-profit organization is the primary focus. Emphasis is placed on budgeting, fund accounting, cash flow analysis, expenditure control, long-range financial planning, audits, and grant and contract management. Special

attention is paid to compliance with not-for-profit accounting and financial management principles with reference to maintaining public access and ethical standards.

ADMN 656 **3 credits**

Not-For-Profit Organizations and Issues

A framework outlining the roles and functions of the principal types of not-for-profit organizations is presented. Major characteristics are introduced that distinguish not-for-profit organizations from their counterparts in the private and public sectors. The challenges, opportunities, and common issues facing managers of not-for-profit organizations are explored. These issues include administrative cost control, preserving the organization's legal status and revenue base, staffing and organizing in response to client needs, and ethical considerations. Specific laws, regulations, policies, and court rulings that affect the not-for-profit sector are examined.

ADMN 657 **3 credits**

Management of Critical Resources in Not-For-Profit Organizations

Current ideas and approaches related to financial and human resource management in not-for-profit organizations are reviewed. Included are issues and methods related to implementing revenue enhancement and preservation strategies, achieving operational efficiencies, and reducing overhead costs.

Human resource issues that are discussed include recruitment, retention and training of both professional and volunteer staff, managing workforce changes, and employee motivation. Roles and responsibilities of boards, executives, and staff in developing and implementing organizational strategies are examined.

ADMN 658 **3 credits**

Marketing, Development, and Public Relations in Not-for-Profit Organizations

Principles and practices required to develop and promote the products, services, positions, and image of not-for-profit organizations are considered. Fundraising and membership recruitment issues provide a central focus. Topics include the design of a marketing strategy and marketing mix, pricing issues, alternative revenue-generating mechanisms, and customer service. Use of the media, advertising and promotion methods, and relationships with business, government, and the community are explored. The integration of sponsors, members, and chapters in the total marketing effort is examined.

ADMN 659 **3 credits**

Strategic Management in Not-for-Profit Organizations

The integration and application of strategic management principles, concepts, and practices in not-for-profit organizations are discussed. The development of mission statements, goal-setting concepts, and strategy formulation and implementation approaches are included. Students are provided the opportunity to design organizational plans and strategies relevant to their specific needs and the needs of their organizations.

Procurement and Contract Management Track (PCM)

The Procurement and Contract Management track is designed for individuals who are involved in contract administration or procurement activities in the private, public, and not-for-profit sectors. The courses in this track provide a foundation for understanding both the strategic and operational

aspects of the procurement function. Both general and specialized management studies are integrated with the required courses.

ADMN 622 **3 credits**
Integrative Supply Chain Management

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

ADMN 623 **3 credits**
Contemporary Logistics

This course covers logistical issues, techniques, methodologies, and strategies designed to enhance organizational efficiency. The course specifically examines the total cost approach to logistics; logistical planning and implementation; logistical concepts; systems relationships and integration; demand forecasting; interplant movement; inventory management and control; order management and processing; packaging; plant and warehouse selection; production scheduling; traffic and transportation management; warehouse and distribution management; recycling; and other logistical strategies, techniques, and methodologies.

ADMN 626 **3 credits**
Purchasing and Materials Management

An overview of the procurement and contracting cycle is provided with other organizational functions. Methods of purchasing and source selection are covered, with a focus on receipt, inspection, and quality assurance. Documentation and reporting specifics are examined, as are surplus, salvage, and disposal issues. Inventory, physical distribution, and logistics are considered.

ADMN 627 **3 credits**
Legal Aspects of Contracting

The law of commercial purchasing is presented, including the law of agency, contracts, sales, torts, and antitrust. In addition, the Federal Acquisition Regulation and American Bar Association model procurement codes for state and local governments are examined. Topics addressed include the authority of purchasing, unauthorized purchases, rights and duties of sellers and buyers under a contract, buyer rights upon receipt of nonconforming goods, ability to terminate a sales contract, formation of government contracts, and formal dispute resolution.

ADMN 628 **3 credits**
Contract Pricing and Negotiation

Techniques for planning, conducting, and managing negotiated procurements are presented. A primary focus is on analytical techniques for conducting price and cost analysis in preparation for negotiations. Techniques for critically examining all categories of costs, including profit, are examined. The theory and practice of negotiations are studied, and students are given the opportunity to practice negotiation techniques to achieve a fair and reasonable contract price. Students gain practice in

preparing negotiation positions through analysis of cases containing detailed cost and pricing data. Ethical decision making throughout these processes is addressed.

ADMN 629 **3 credits**
Strategic Purchasing and Logistics

This course presents issues and methodologies related to strategic purchasing and logistics. The ethics, social responsibility, and accountability considerations in procurement, logistics, and contract management are among the major topics considered in this course. In addition, specific areas of study such as the professional development of staff, just-in-time management, electronic data interchange, vendor assessment and development, pricing and negotiation, and international procurement issues are presented.

ADMN 660 **3 credits**
Commercial Transactions in a Technological Environment: Law, Management, and Technology Transfer

Students are presented with legal issues and management methodologies related to commercial transactions in a technological environment. The law, ethics, accountability, and contract management considerations in the procurement of technology products and services are among the major topics considered in this course. In addition, specific areas of study such as commercial sales transactions, government commercial item acquisition, private and government contracts for services, assignment and protection of proprietary rights in technology products, technology transfers, and international contractual issues in the procurement of products and services are presented.

Note: It is recommended that students complete ADMN 627 before enrolling in ADMN 660.

Master of Science in Technology Management

Technology management is vitally important for both private-sector organizations, which must face the challenges associated with the fast pace of technological change, as well as 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. This program encompasses all aspects of management associated with the identification, development, acquisition, and application of technologies for the production of goods and services.

The Technology Management program includes the basic program focusing on innovation and entrepreneurship, as well as specialty tracks in Biotechnology Systems Management and Technology Systems Management.

(See also the Executive Master's Program in Technology Management. This program is offered in an accelerated seminar format with face-to-face Saturday classes.)

Degree Program

The degree program consists of four segments: required core courses, track courses, management electives, and a final management project (3 credits), or, in lieu of the management project, the two-course option.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

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

Degree Status

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

The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 26) for information about the TOEFL and TWE examinations.

Provisional Status

Provisional status may be granted to students who fall slightly below the criteria for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate

Department Chair

John O. Aje, *Department Chair*
jaje@umuc.edu

Fran Baldwin, *Administrative Assistant*
fbaldwin@umuc.edu
Phone: 301-985-7824

Program Directors

Fred Betz, *Program Director*
fbetz@umuc.edu

Robert Ouellette, *Program Director*
rouellette@umuc.edu

courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits are moved automatically to degree status. No courses may be repeated while the student is in provisional status. The minimum admission requirements for provisional status are: a bachelor's degree from a regionally accredited university; an undergraduate grade-point average of at least 2.5 on a 4.0 scale in the student's major area of study; submission of the official transcript from the bachelor's-degree-granting institution; and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Classification

Decision-pending classification is short term and is meant for students who have not completed the admission process as described above. Students may enroll in one of the following graduate courses before UMUC has received the official college

transcript from the bachelor's-degree-granting institution: TMAN 611, TMAN 612, TMAN 613, or TMAN 633. Students must receive an admission decision before subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

Certificate Program

The Master of Science in Technology Management program has three certificates related to this discipline. See page 114 for more information.

Locations

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

Basic Program Core Courses

TMAN 611 3 credits

Principles of Technology Management

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

Note: This course replaces TMAN 601.

TMAN 612 3 credits

Financial Management for Technology Managers

This course prepares students 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. Topics include economic concepts, financial markets, financial accounting, cost of capital, cost management, discounted cash flows, capital budgeting, product costing and pricing, and performance measurement.

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

TMAN 613 3 credits

Marketing Technology-Based Products and Services

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

TMAN 614 3 credits

Strategic Management of Technology and Innovation

Students apply strategic analysis techniques to business policy and organizational development. Emphasis is placed on linking technology policy with corporate strategy and on identifying technology options appropriate for the business or organizational strategy being executed. Topical

coverage includes historical perspectives on strategic technology planning, external and internal strategic analysis, technology forecasting, benchmarking, corporate intelligence, and implementation and control strategies.

Note: This course replaces TMAN 605.

TMAN 621 3 credits

Systems Analysis and Operations Research

This course introduces students to the fundamentals of systems analysis and operations research. The purpose is to provide an understanding of the systems view of a product, service, or process to include a generic representation of its elements and dynamics. The skills, tools, and methodologies needed to quantitatively analyze and optimize systems and to make decisions as technology managers are provided. State-of-the-art analytical tools and quantitative methods, including computer-based solutions, are discussed. Topics covered include decision theory, linear programming, transportation problems, network analysis, game theory, reliability theory, cost estimating, and expert systems.

Note: This course replaces ENGM 615 in the TMAN program only.

TMAN 622 3 credits

Systems Development, Acquisition, and Management

The concepts, processes, and techniques are introduced that are used in the management of programs (governmental or commercial) to develop, acquire, and implement complex systems. The course examines the life cycle phases of managing a complex system, from conception and preliminary design to detail design and development, production, acquisition, implementation, operation, and maintenance. Emphasis is placed on understanding the key skills and approach to managing the total life cycle of a technically based systems program.

An overview is provided of the legal issues and constraints of the organizational environment influencing the acquisition and implementation of systems. The focus is

on the formulation of a strategy that integrates factors such as system requirements, competition, rights-to-data, make-or-buy decisions, source selection, standardization, and warranties/guarantees. Objectives and key activities are provided for each milestone during the development of a program.

Note: This course replaces TMAN 654.

TMAN 631 **3 credits**

Operations Management

Concepts and methods of managing production and service operations for global competitiveness are introduced. The focus of the course is on the cross-functional integration of design, manufacturing, and marketing systems. Students are taught management skills and techniques needed for effective operations management that blend the interests of customer, employee, and manager, along with those of the public, stockholders, and other stakeholders. A systems approach is used to cover topics such as design and control for customer satisfaction, and the translation of demand into orders and orders into outcomes. Topical coverage includes product strategy, demand forecasting, capacity planning, aggregate planning, inventory management and just-in-time (JIT), material requirements planning (MRP), facility location and layout, and use of state-of-the-art information technology. Emphasis is placed on computer-based techniques for solving problems.

TMAN 632 **3 credits**

Organizational Performance Management

Organizations of all types are facing increasing pressures to improve organizational effectiveness. Organizations that succeed will be those that anticipate change and develop strategies in advance. This puts a premium on certain performance capabilities such as adaptability, flexibility, responsiveness, decisiveness, speed, quality, value, and customer satisfaction. This course brings together the most successful strategies and approaches for achieving a high-performing organization. These strategies and approaches are based on the latest research findings as well as those used by

“world-class” organizations. The course covers all the key elements that contribute to high performance and organizational effectiveness. Illustrations and examples of organizations, in both the public and private sectors, that have successfully applied these strategies and approaches are provided throughout the course.

Note: This course replaces TMAN 665.

TMAN 633 **3 credits**

Human Resource Issues in Technology-Based Organizations

This course presents issues, theories, and procedures associated with the effective management of human resources in technology-based organizations. Emphasis is placed on the integration of human resource planning with corporate strategic planning. The purpose of the course 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. Topical issues 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. A focus of the course is on group and team formation and group dynamics using applied exercises and case studies. The course also discusses 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.

Note: This course replaces TMAN 650.

TMAN 671 **3 credits**

Seminar in Technology and Innovation Management

This is the capstone course for the Technology Management program. The objective is to provide students with an integrative exercise that draws upon the fundamental materials and skills developed in the core courses. Students work in teams to develop a comprehensive business plan for a new venture, (that is, a new product or service).

The start-up concept is developed through the stages of initial screening, market assessment, business analysis (preliminary and final plan), product development, testing, production, and market launch. The techniques of market research and planning, competitive analysis, return on investment, financing and budgeting, marketing, staffing and organizational design, quality management, and project planning are emphasized in the development of the new venture.

Prerequisites: Completion of 27 semester hours of graduate coursework.

Note: This course replaces TMAN 670.

Elective/Depth Courses

Students must choose one course from the following:

TMAN 640 **3 credits**

Project Management

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

TMAN 645 **3 credits**

Electronic Commerce

This course begins by formulating a definition of electronic commerce and linking it to strategic objectives. It then relates technological, political, economic, and market forces to internal electronic commerce (EC) capabilities such as management, production and services,

marketing, finance, R&D, and technology. Special attention is given to changing relationships in the value chain among producers, distributors, and customers brought about by the exponential growth of networks—Internet, Intranet and Extranets—and the emergence of digital cash as the primary form of economic transactions. An EC strategy is developed that addresses major issues such as network security and pricing, reliability and integrity of information, intellectual property rights, and privacy and international standards.

The course is divided into modules. Assignments (individual and group) are carried out as part of an integrated semester project case study. The case study provides a means for exploring how forces combine to bring about changes in transaction mechanisms, the primary unit of a market economy, and the impact of these changes on the operation and structure of economic, social, and political institutions influencing the rate and character of EC adaptation.

Any ENVM course 3 credits

ADMN 644 3 credits

Decision Support and Expert Systems

For a complete description of this course, see page 68.

CSMN 615 3 credits

Hardware and Operating Systems

For a complete description of this course, see page 47.

End-of-Program Option

Students can do a management project or take two additional courses as described below:

TMAN 690 and TMAN 690M 3 credits

Management Project

Students demonstrate their ability to structure and complete a major project that identifies and resolves an important management or organizational issue. Students report the results of their efforts in written and oral form. The project may be developed in cooperation with the student's current employers or with some organiza-

tion 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.

Students register for TMAN 690 the first semester and TMAN 690M the second semester.

Prerequisites: Completion of 30 semester hours of graduate coursework and TMAN 671.

Two-Course Option

Instead of the management project, students may take two additional courses from the approved list—one TMAN course that the student has not already taken as part of their program (3 credits) and one interdisciplinary course from an approved list (3 credits). The approved courses are as follows:

Interdisciplinary/Breadth Courses (select one)

ADMN 625	Organizational Communication
ADMN 628	Contract Pricing and Negotiation
CSMN 636	Telecommunications and Connectivity
IMAN 615	Foreign Investment and Strategic Alliances
IMAN 640	International Marketing Management
IMAN 661*	Area Studies: Business Strategies for Europe
TLMN 602	Telecommunications Industry: Structure and Environment

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

**Includes a trip to Europe.*

Biotechnology Management Track

The Biotechnology Management track is designed to teach scientists, engineers, and other professionals in the emerging biotechnology fields skills in management and marketing

that complement their technical skills and increase their likelihood of success in biotechnology ventures. The courses expose students to societal issues in biotechnology, commercialization approaches, and methodologies for evaluating, selecting, and managing biotechnology projects. Students take three required track courses and one elective.

Core Courses

Students must take the following courses: TMAN 611, TMAN 612, TMAN 613, TMAN 614, TMAN 633, and TMAN 671.

For a complete description of these courses, see pages 73–74.

Track Courses

Students must take the following courses:

BTMN 640 3 credits

Societal Issues in Biotechnology

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

BTMN 641 3 credits

Commercializing Biotechnology in Early-Stage Ventures

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.

BTMN 644 **3 credits**

The Regulatory Environment of Biotechnology

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

BTMN 646 **3 credits**

Bioinformatics

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

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

Elective/Depth Courses

Students must choose one of the following UMBC or UMUC elective courses:

BTMN 642 **3 credits**

Selection and Evaluation of Biotechnology Projects

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

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

BTMN 643 **3 credits**

The Techniques of Biotechnology

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

BTMN 645 **3 credits**

The Business of Biotechnology

The purpose of this class is to introduce the students to the range of businesses associated with biotechnology. These businesses range from medical procedures, self-testing procedures, pharmaceutical, reagents, agriculture, environmental bioremediation, energy production, material and mineral recovery, veterinary medicine, and sensors. The students will be introduced to a variety of alliances and funding sources as well as global and international issues.

TMAN 632 **3 credits**

Organizational Performance Management

For a complete description of this course, see page 74.

TMAN 645 **3 credits**

Electronic Commerce

For a complete description of this course, see page 74.

UMBC Courses

Students interested in UMBC courses should call the Biochemical Engineering program at 410-455-3400 to find out when the courses are offered. These courses are not available online.

ENCH 660 **3 credits**

Regulatory Issues in Biotechnology

Provides a comprehensive coverage of all steps involved with the regulatory approval process for a biotechnology-derived product. Documentation preparation for IND, PLA, EL, preclinical safety data, clinical studies, and facilities inspection. Scientific and regulatory principles are involved.

ENCH 662 **3 credits**

Good Manufacturing Practices for Bioprocesses

This course covers in depth the development and implementation of good manufacturing practices (GMPs) in the biotech industry. Topics covered include building and facilities, equipment design, utilities, in-process controls, records, and adequate process validation.

ENCH 664 **3 credits**

Quality Control and Quality Assurance for Biotechnology Products

This course covers in depth the key issues associated with adequate quality control systems, assays, and stability for novel biotechnology products. Topics covered include quality concepts, product release testing and specifications, in-process testing, product characterization, quality assurance documentation and audits, and vendor certification.

ENCH 666

3 credits

Biotechnology GMP Facility Design, Construction, and Validation

Presents an in-depth discussion of the engineering design of a biotech facility under GMP compliance. Topics covered include bulk plant design, process equipment design, utilities, instrumentation, controls, and computerization. Facility and software validation are addressed as well.

End-of-Program Option

Any BTMN class may be selected as an elective depth course.

Technology Systems Management Track

The Technology Systems Management track is intended for students interested in managing systems acquisition and development in technical enterprises. The courses include methods and applications for creatively designing, developing, integrating, and producing a final product; the tools and skills of project management; and systems acquisition approaches and methodologies in both the public and private sectors. Provision is made for depth in Information Technology Systems.

Core Courses (15 credits)

Students must take the following courses: TMAN 611, TMAN 612, TMAN 613, TMAN 614, and TMAN 671.

For a complete description of these courses, see pages. 73–74.

Track Courses (12 credits)

Students must take the following courses:

TMAN 621

3 credits

Systems Analysis and Operations Research

For a complete description of this course, see page 73.

TMAN 622

3 credits

Systems Development, Acquisition, and Management

For a complete description of this course, see page 73.

TMAN 623

3 credits

Systems Analysis and Design

Students are introduced to the principles and techniques of systems analysis and design methods with particular emphasis on information systems. The conceptual architecture of an information system, information systems framework, and conceptual building blocks are introduced. The concept and

techniques of information systems models, such as data model, process model, and network model are discussed in depth. An appreciation of multi-disciplinary approach needed for systems analysis and management will be gained through an understanding of information systems project management techniques, tools, and skills required for a successful completion of an information systems analysis and design project.

TMAN 640

3 credits

Project Management

For a complete description of this course, see page 73.

Electives/Depth Courses

Students must choose two of the following elective courses: CSMN 615, CSMN 636, CSMN 639, CSMN 655, TLMN 610, TLMN 620, and TLMN 645.

For a complete description of these courses, see pages 46, 47, 48, 79, and 80.

End-of-Program Option

One TMAN course (either TMAN 632 or TMAN 633) and one course from the following: ADMN 627, ADMN 628, ADMN 661, ADMN 663, or IMAN 615.

Master of Science in Telecommunications Management

The Master of Science in Telecommunications Management is designed to provide the technical knowledge and management skills needed to plan, acquire, operate, and evaluate telecommunication systems. The program emphasizes critical management concepts, such as the structure and environment of the telecommunications industry, strategic planning, financial management, and quality improvement. In addition, the program offers instruction specific to telecommunications in the following areas: data-communication systems, local- and wide-area networking systems, satellite systems, wireless telecommunication systems, network management, the Internet, the complex process of hardware and software acquisition from the standpoint of both the purchaser and the vendor, and the application of these topics to practical issues of telecommunications systems integration and management.

(See also the Executive Master's Program in Information Technology. This program is offered in an accelerated seminar format with Saturday classes.)

Degree Program

This degree program consists of five (3-credit) core courses, three (3-credit) technical specialization courses, three (3-credit) required systems courses, and one (3-credit) management project or, in lieu of the project, the two-course option.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP 610 Library Skills for the Information Age within their first 6 credits of study.

National Defense University

Students who have completed the Advanced Management Program or the Chief Information Officer Certificate Program at the National Defense University Information Resources Management College (IRMC)

may transfer 15 credits in partial satisfaction of the Master of Science in Telecommunications Management degree (subject to Graduate School time limits of seven consecutive years) to replace TLMN 602, TMAN 612, TMAN 614, TMAN 632, and one elective course. Students must apply and meet the established admission criteria for the program. Interested students should call either an IRMC advisor or contact the academic department.

Admission Requirements

A student may be admitted in one of four classifications: degree, provisional, certificate, or decision pending. The decision-pending classification is temporary while students await final approval of admission. Certificate status exists for students pursuing the Graduate School credit certificate. Admission requirements for each classification are explained below.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree, preferably in a technical

Department Chair

John M. Richardson, *Department Chair*
jrichardson@umuc.edu

Regina Massaquoi, *Administrative Assistant*
rmasaquoi@umuc.edu
Phone: 301-985-4616

Program Directors

David Cohen, *Program Director*
dcohen@umuc.edu

Donald L. Goff, *Program Director*
dgooff@umuc.edu

Program Coordinators

Kimberly Chung, *Academic Coordinator*
kchung@umuc.edu

Steven Kerby, *Distance Education Coordinator*
skerby@umuc.edu

field, from a regionally accredited university or college; an overall undergraduate GPA of at least 3.0 on a 4.0 scale; at least one undergraduate course in statistics and one semester of calculus (that is, Calculus I) completed with a minimum grade of "C" in each course or equivalent proficiency demonstrated by means of a College Level Examination Program (CLEP) or Defense Activity for Non-Traditional Educational Support (DANTES) test; submission of the official transcript from the bachelor's-degree-granting institution; and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 26) for information about the TOEFL and TWE examinations.

Provisional Status

Provisional status may be granted to students who fall slightly below the criteria for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies.

Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits and remedy any other unmet admission requirements are moved automatically to degree status. No courses may be repeated while in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Classification

The decision-pending classification is short term and is meant for students who have not completed the admission process described above. Students are encouraged to register for one of the following graduate courses before UMUC has received the official transcript from the bachelor's-degree-granting institution: TLMN 602, TMAN 632, or TMAN 612. Students must receive an admission decision prior to subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

Certificate Program

The Master of Science in Telecommunications Management program has one certificate related to this discipline. See page 113 for more information.

Locations

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

Required Core Courses

TLMN 602 **3 credits**

Telecommunications Industry: Structure and Environment

Major technological, legal, and regulatory developments (national and international) are studied as they have molded the structure of the current telecommunications industry. The course traces the progression of early legislation, the regulated monopoly, antitrust, divestiture, and recent legislation that has led to the current industry environment of competition and incipient integration of different industry segments. The roles of various national and international institutions in shaping the telecommunications industry are discussed.

TMAN 614 **3 credits**

Strategic Management of Technology and Innovation

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

TMAN 612 **3 credits**

Financial Management for Technology Managers

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

TMAN 632 **3 credits**

Management of Productivity and Quality in Technological Operations

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

TLMN 660 **3 credits**

Telecommunications Management Issues

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 R&D, 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.

Prerequisites: Completion of 27 credits of graduate coursework.

Technological Specialization Courses

Students must select three of the following six courses:

TLMN 610 **3 credits**

Data-Communications Systems

This course covers the technology underlying data-communications systems, such as transmission media, modulation and demodulation, multiplexing, packet switching, hardware, software, and network operations. Topics included are fiber optics, the Integrated Services Digital Network (ISDN), T-1 and T-3 multiplexers, the open systems interconnection (OSI) model, and integrated voice-data equipment. 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. Students must complete a telecommunications project.

Prerequisites: Statistics and Calculus I, or equivalent.

TLMN 620 **3 credits**

Local Area Networking Systems

This course examines the design, implementation, and management of computer networking systems. It examines the seven-layer Open Systems Interconnection (OSI) reference model. Networking methods for local area networking (LAN) such as Ethernet and Token Ring are studied along with enterprise network technologies such as Fiber Distributed Data Interface (FDDI). Also examined are local area networking devices such as repeaters, bridges, routers, hubs, and gateways. Traffic engineering techniques in networks are analyzed and evaluated. Various distributed computing architectures and emerging trends in the supporting technologies are central to course content. Topical discussions and case studies reinforce and

synthesize new-found principles and provide the means for practical application of abstract concepts. Each session includes evaluation methodologies relevant to strategic and economic planning.

Prerequisites: Statistics and Calculus I, or equivalent.

TLMN 625 **3 credits**

Wide Area Networking Systems

This course discusses transmission and switching for wide area networks (WAN) including circuit switched networks, such as the Public Switched Telephone Network (PSTN), and packet networks, such as the Internet. Other topics include Common-Channel Interoffice Signaling (CCIS), Signaling System 7 (SS7), frame relay, and asynchronous transfer mode (ATM). Wireless mobile systems are covered including cellular and personal communication services (PCS). Audio and video compression techniques are examined. Also studied are Private Branch Exchanges (PBX) including computer-telephone integration (CTI). A review is made of current trends including voice over Internet Protocol (IP).

Prerequisites: Statistics and Calculus I, or equivalent.

TLMN 630 **3 credits**

Satellite Communications Systems

This course analyzes issues surrounding the current and future design and use of satellite communications systems. Topics include such satellite system characteristics as type, class (bandwidth, standards, and availability), applications, interfaces, traffic patterns, network installation, performance criteria, hardware, and cost. Current and planned satellite communications are examined and compared to future needs and technologies.

Prerequisites: Statistics and Calculus I, or equivalent.

TLMN 636 **3 credits**

Internet Principles and Applications

This course examines both the technological base and applications of the Internet. The first part of the course studies Internet technology including packet networking, Transport Control Protocol/Internet Protocol (TCP/IP), and Internet security

and authentication (for example, firewalls, encryption, virtual private networks), Internet 2 (a new research oriented Internet) and IPV.6 (advanced Internet protocol). The second part of the course addresses 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 **3 credits**

Wireless Telecommunications Systems

This course reviews wireless telecommunication systems from microcell to global infrastructures. Its purpose is to teach the technology, applications, and limitations of these systems, which have become an essential element of the world information infrastructure. Technology topics covered include cellular communication principles, coding, antenna and propagation effects, channel access schemes, traffic engineering, and wireless network design. The course places emphasis on terrestrial systems such as cellular, personal communication services (PCS), dispatch, wireless local-area networks (LANs), and wireless data systems. Also covered are the topic areas of market trends, regulations, and standards. Students assess the role of wireless systems in comparison with other telecommunications alternatives available to organizations.

Prerequisites: Statistics and Calculus I, or equivalent.

Required Systems Courses

TLMN 641 **3 credits**

Network Management and Design

This course studies those techniques that network managers can utilize to maintain and improve the performance of a telecommunication network. A network management system is defined and explained, including a description of how software package programs can monitor real-time performance of a network to identify problems. The emphasis of the course is placed on the five tasks traditionally

involved with network management (fault management, configuration management, performance management, security management, and accounting management). A review is made of examples of current specific network management products. Also covered is how the performance data gathered from the monitoring can be archived and used later as an input when decisions are made on changes in the network architecture. Additionally, network design is studied for the development of a new network architecture when only user requirements are known.

Note: Students who have already completed TLMN 640 may take TLMN 641 as a technological specialization course.

TLMN 650 **3 credits**

Hardware and Software Acquisition

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 **3 credits**

Systems Integration for Telecommunications Managers

This course delineates methods by which a telecommunication system can be put together to serve the needs of an organization. Its purpose is to prescribe a systematic process for structuring, selecting, acquiring, integrating, and managing telecommunication resources for an enterprise. The systems development life cycle is employed as it applies to telecommunication systems. Various approaches to the life-cycle process are set forth, including the associated planning techniques, project management processes, and tools currently available to support these activities. Students trace how the project manager should operate under

constraints of time, cost, performance, competition, and regulation. Students work on a group project, laboratory exercises, and extended case studies.

End-of-Program Option

Management Project

**TLMN 690 (3 credits)
and TLMN 690M (1 credit)**

Telecommunications Management Project

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

Prerequisites: Completion of 27 credits of graduate coursework and TLMN 660.

Two-Course Option

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

Interdisciplinary/Breadth Courses (Select one)

ADMN 625 3 credits

Organizational Communication and Group Development

For a description of this course, please see page 62.

IMAN 601 3 credits

Strategic Management in a Global Environment

For a description of this course, please see page 42.

IMAN 625 3 credits

International Trade and Trade Policy

For a description of this course, please see page 42.

IMAN 635 3 credits

The Public Sector in International Commerce

For a description of this course, please see page 43.

IMAN 661 3 credits

Area Studies: Business Strategies in Europe

*For a description of this course, please see page 43.
(Includes a trip to Europe)*

TMAN 633 3 credits

Human Resource Issues in Technology-Based Organizations

For a description of this course, please see page 74.

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

Elective/Depth Courses

Students should select CSMN 601, CSMN 615, CSMN 655, or any TLMN course not yet taken.

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.

The program consists of eight core courses (24 credits), three elective courses (9 credits) and the capstone course (3 credits). It was established in the summer of 1999. For those students enrolled in the joint MSWE program, please contact the academic coordinator for the joint program requirements.

Degree Program

The Master of Software Engineering requires the completion of 12 courses for a total of 36 credits, which must be completed within 7 years. This degree program consists of eight (3-credit) core courses, three (3-credit) electives, and one (3-credit) practical software engineering project.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

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

admission. The admission requirements for each classification are explained in the following sections.

Degree Status

Degree status is granted to students who meet or exceed the following criteria: a bachelor's degree from a regionally accredited institution; an overall undergraduate GPA of 3.0 on a 4.0 scale; either an undergraduate degree in Computer Science or at least one year's experience of working in the software development arena or the information technology industry; either a course in discrete math—for example, CMSC 150 or equivalent or CMIS 160 or equivalent—or an undergraduate degree in engineering; and competence in using an imperative structured programming language (work experience may be used).

Students must submit the following documents with their application: an official transcript from the bachelor's-degree-granting institution and the transcript that notes the discrete math course, a personal statement describing work experience and current employment (as

Department Chair

John M. Richardson, *Department Chair*
jrichardson@umuc.edu

Regina Massaquoi, *Administrative Assistant*
rmassaquoi@umuc.edu
Phone: 301-985-4616

Program Director

Hasan Sayani, *Program Director*
hsayani@umuc.edu

Program Coordinators

Kimberly Chung, *Academic Coordinator*
kchung@umuc.edu

Steven Kerby, *Distance Coordinator*
skerby@umuc.edu

much technical experience should be detailed as possible), a discussion of how participation in the master's program will assist in achieving future goals and aspirations (must also be detailed in application), and two letters of recommendation. Students are strongly encouraged to submit a résumé.

The UMUC Graduate School reserves the right to request additional transcripts.

Provisional Status

Students may be admitted to provisional status if they have submitted the official transcript from the bachelor's-degree-granting institution, and (1) the previous academic record is borderline (for example, 2.5 GPA), (2) prerequisite coursework is insufficient, (3) the applicant has majored in another field and has not yet clearly demonstrated abilities in the proposed new field, or (4) the applicant has completed the bachelor's degree but has not yet submitted official verification of the last semester's work and receipt of the degree. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their

ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits are moved automatically to degree status provided that other requirements have been satisfied. The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Classification

The decision-pending classification is short term and is meant for students who have not completed the admission process previously described. Students are encouraged to register for one of the following graduate courses before UMUC has received the official transcript from the bachelor's-degree-granting institution: MSWE 601 or TMAN 640, or an elective. Students must receive an admission decision prior to subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

Certificate Program

The Master of Software Engineering program has one certificate related to this discipline. See page 112 for more information.

Locations

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

Core Courses

MSWE 601 3 credits

Issues in Software Engineering

This introductory course to the program covers basic concepts and practices within the field important to both the practitioner and the theorist, as the rate of change in software engineering technology continues

to increase. It also examines current issues in systems engineering, software architectures, product assurance principles, and software project management, all described in terms of established software process improvement models. Various industry life-cycle models are presented, with examples of their use. Case studies may also be included.

MSWE 603 3 credits

Systems Engineering

This course examines the systems engineering process with special emphasis on software engineering as a discipline within systems engineering. The course includes an overview of system theory and structures, elements of the system life cycle (including systems design and development), risk and trade-off analyses, modeling and simulation, and the tools needed to analyze and support the systems process.

Prerequisite: MSWE 601 or permission.

MSWE 635 3 credits

Software Systems Development

The purpose of this course is to provide a thorough understanding of the development life cycle as it applies to large software systems. The course discusses various approaches to determining if the system implementation is correct during the traditional waterfall model (system analysis, system design, system implementation, and system use and evaluation), spiral model, and rapid prototyping. An important aspect of this course is the integration of the principles of project management, engineering, and quality concepts to illustrate how the principles of prevention of defects may be applied across the development life cycle.

Prerequisite: MSWE 603 and TMAN 640 or permission.

MSWE 645 3 credits

System and Software Standards and Requirements

Major models of software requirements and specifications (sequential and concurrent systems), existing software standards and practices, and formal methods of software development are examined. A comparative survey of various languages and methods

serves to emphasize similarities and significant differences. Additional topics covered include writing system and software requirements, formal specification analysis, formal description reasoning, models of “standard” paradigms, and translations of such models into formal notations.

Prerequisite: MSWE 601 or CSMN 601 or permission.

MSWE 646 3 credits

Software Design and Implementation

This course guides the student in the transition from programming-in-the-small to programming-in-the-large. Software development processes and the role of design as applied in those processes are discussed. Major design methods and available computer-aided software engineering (CASE) tools, the proper application of design methods, and techniques for estimating the magnitude of the development effort are reviewed. Strengths and weaknesses of the development methods are covered, along with traceability to requirements and code.

Prerequisite: MSWE 601 or CSMN 601 or permission.

MSWE 647 3 credits

Software Verification and Validation

The evaluation of software for correctness, efficiency, performance, and reliability is addressed. Specific skills covered include program proving, code inspection, unit-level testing, and system-level analysis. The difficulty and cost of some types of analysis are examined in addition to the need for automation of tedious tasks. Problem-solving skills are stressed, especially in analysis of code. The textbook world is contrasted with the real world using case studies from the book and personal experiences. Industry attitudes toward reliability and performance are also discussed.

Prerequisite: MSWE 601 or CSMN 601 or permission.

MSWE 648 **3 credits**

Software Maintenance

This course provides a guide for the transition from programming for the short term to programming for the long term. The role of creation and maintenance in the software development process as well as analysis and implementation of a software design are reviewed. The need for software maintenance and evolution, software maintenance process and performance issues, planning for extended software life, and effective mechanisms to control software change are additional topics of discussion.

Prerequisite: MSWE 601 or CSMN 601 or permission.

TMAN 640 **3 credits**

Project Management

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

Electives

Students are required to take three electives (9 credits) from the following range of technical and managerial offerings.

Technical Electives

CSMN 655 **3 credits**

Information Risk Assessment and Security Management

For a full description of this course, see page 48.

CSMN 656 **3 credits**

Database Processing and Design

For a full description of this course, see page 48.

CSMN 658 **3 credits**

Software Reliability and Reusability

For a full description of this course, see page 48.

Managerial Electives

TLMN 610 **3 credits**

Data-Communication Systems

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

TLMN 650 **3 credits**

Hardware and Software Acquisitions

For a full description of this course, see page 80.

TMAN 612 **3 credits**

Financial Management for Technology Managers

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

TMAN 614 **3 credits**

Strategic Management of Technology and Innovation

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

TMAN 633 **3 credits**

Human Resources Issues in Technology-Based Organizations

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

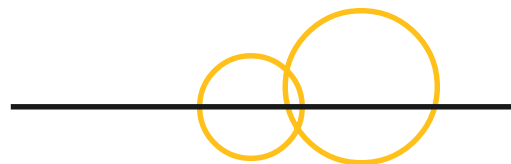
Capstone Course

MSWE 617 **3 credits**

Software Engineering Project

This course may be considered as a comprehensive examination covering the application of the tools, skills, and techniques the students have acquired in the course of their studies. This course provides experience in applying software-engineering techniques by giving the students an opportunity to produce software when working in teams under the schedule constraints commonly experienced in industry. The instructor will emulate the vagueness shown by typical customers in describing requirements. The instructor serves as a guide and mentor, not as a traditional teacher. The students are expected to have acquired the knowledge of what to do and how to do it from the prerequisite classes. It is up to the students to form their own teams (organization) and schedule their work to meet the deadlines imposed by the contract (syllabus).

Prerequisites: All core courses and at least two electives; or permission.



Master of Science in Electronic Commerce/Master of Business Administration*

The purpose of the dual Master of Science in Electronic Commerce (MSEC) and the Master of Business Administration (MBA) is to enable students to extend the breadth and depth of their management study. Based upon the shared curricula of both programs, dual degree students may earn both the MSEC and MBA Master Degrees for substantially fewer credits than if each program were completed separately.

Students may elect to pursue a dual MSEC/MBA degree program. To do so, the student must complete the entire 36-credit MSEC degree followed by 24 credits from the MBA program (OMBA 602, OMBA 604, OMBA 605, and OMBA 606, each of which is worth 6-credits) for a total of 60 credits for both master's degrees. Conversely, a student in the MBA program may pursue the dual degree option by taking 18 credits from the MSEC core curriculum, again for a total of 60 credits for both degrees.

* Program pending approval

Degree Program

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

Certificate Program

A student who already holds a master's degree may choose to earn a 15-credit post-baccalaureate certificate in e-commerce. The required courses for the certificate are:

- ECOM 630 (or CSMN 656)
Information Risk Assessment and Security Management
- ECOM 610
Introduction to E-Commerce
- ECOM 620
E-Marketing
- ECOM 660
E-Commerce Financial Management and Accounting
- ECOM 650 (or TLMN 636)
Internet Principles and Applications

A student completing the E-Commerce certificate may apply these credits toward an MSEC degree.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

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

Program Director

Robert Ouellette, *Program Director*
rouellette@umuc.edu

Fran Baldwin, *Administrative Assistant*
fbaldwin@umuc.edu
Phone: 301-985-7824

Degree Status

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

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section International Applicants (page 26) for information about TOEFL and TWE examinations.

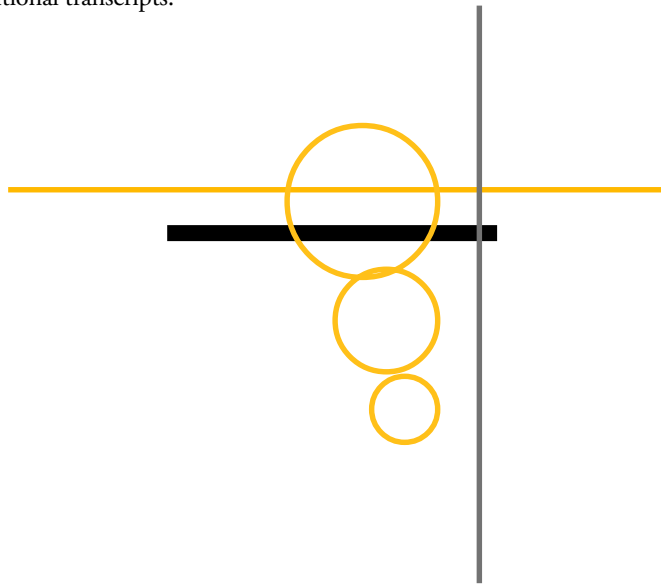
Provisional Status

Provisional status may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional

category. Those who maintain a 3.0 GPA during the completion of the 9 credits are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement. The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Classification

Decision-pending classification is short term and is meant for students who have not completed the admission process described previously. Students may enroll in one of the following graduate courses before UMUC has received the official college transcript from the bachelor's-degree-granting institution: ECOM 6103, ECOM 640, or ECOM 620. Students must receive an admission decision before subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.



Master of International Management/Master of Business Administration

The purpose of the dual Master of International Management (MIM) and the Master of Business Administration (MBA) is to enable students to extend the breadth and depth of their management study. Based upon the shared curricula of both programs, dual degree students may earn both the MIM and MBA Master Degrees for substantially fewer credits than if each program were completed separately. Thus, the joint MIM/MBA may be completed with 54 to 57 credits rather than 78 to 81 credits.

(After completion of the Master of International Management, 18 additional credits are required for the Executive dual degree. See page 105 for more details.)

Program Director

Master of International Management/
Master of Business Administration

Clarence J. Mann, *Program Director*
cmann@umuc.edu

Wendy Adams, *Administrative Assistant*
wadams@umuc.edu
Phone: 301-985-7029

International Management

Al Raider, *Program Director*
araider@umuc.edu

Irina Ryland, *Academic Coordinator*
iryland@umuc.edu

Degree Program

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

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

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

Degree Status

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

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section International Applicants (page 26) for information about TOEFL and TWE examinations.

Provisional Status

Provisional status for the MIM may be granted to students who fall slightly below the criteria for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the

9 credits and who meet all entrance requirements are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited college or university, an undergraduate grade-point average of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement.

Provisional status for the MBA may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Those who achieve a 3.0 GPA during completion of six MBA credits and who meet all entrance requirements are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at

least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor-degree granting institution, and a personal statement.

(See Executive MBA as an alternate program.)

The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Status

For the MIM program, the decision-pending classification is short term and is meant for students who have not completed the admission process described above. Students may enroll in one of the following graduate courses before UMUC has received the official college transcript from the bachelor's-degree-granting institution: IMAN 601, ADMN 630, ADMN 631, or ADMN 625. Students must receive an admission decision prior to subsequent enrollments.

MBA students in decision-pending status can register for OMBA 600 MBA Orientation, and/or UCSP 610 Library Skills.

The UMUC Graduate School reserves the right to request additional transcripts.

Area Studies Option

Upon approval of the program director and the dean, students who have language proficiency and experience in a particular region of the world may receive transfer credit for up to two relevant graduate courses taken at another university as substitutes for courses in the IMAN curriculum. Three criteria must be met by the student petitioning to enter the Area Studies option: working knowledge of a language relevant to the region or country in question, demonstrated commitment to the region (nationality, work experience, previous coursework, and so forth), and relevance of the transferred courses to the IMAN curriculum (regional economics, trade, business, and so forth). Other students interested in Area Studies should consider IMAN 661. See the description on page 43.

Locations

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

Program Structure for MIM to Dual Degree

Students must first complete the entire MIM degree program (36–39 credits) and meet all the requirements for graduation. Upon application, students will be awarded an MIM. The MIM “alumni” can then earn an MBA degree (second actual degree document) by completing 18 semester hours of MBA work. The choice of MBA seminars will depend on the MIM specialty track.

Students who complete the International Commerce and International Marketing tracks of the MIM will take these courses which are 6 credits each:

- Seminar 601 (OMBA 601D)—Organization and Management Processes
- Seminar 604 (OMBA 604D)—Technology and Operations Management
- Seminar 605 (OMBA 605D)—Economics of Management Decisions

Students who complete the International Finance track of the MIM will take these courses which are 6 credits each:

- Seminar 601 (OMBA 601D)—Organization and Management Processes
- Seminar 603 (OMBA 603D)—Marketing of New Ideas
- Seminar 604 (OMBA 604D)—Technology and Operations Management

Students who complete the Executive Master of International Management will take these courses which are 6 credits each:

- Seminar 603 (OMBA 603D)—Marketing of New Ideas
- Seminar 604 (OMBA 604D)—Technology and Operations Management
- Seminar 605 (OMBA 605D)—Economics of Management Decisions

Program Structure for MBA to Dual Degree

Students must first complete the entire MBA degree program (42 credits) and meet all requirements for graduation. Upon application, students will be awarded an MBA. MBA students who elect the dual degree program must take 12 additional MIM credits from the following list:

- IMAN 601 Strategic Management in a Global Environment
and

- IMAN 615 Foreign Investment and Strategic Alliances

Plus, select two other courses from among the following:

- IMAN 635 Public Sector in International Commerce
- IMAN 640 International Marketing Management
- IMAN 645 International Legal & Tax Environment
- ADMN 639 Multinational Financial Management
- IMAN 661, 662 or other Area Studies Courses depending upon the region of interest.

All of the requirements for both degrees must be completed within 7 years. All MBA work must be completed in 5 years.

Additional information on the combined degree program will become available during the fall 2000 semester. As information becomes available, it will be posted at www.umuc.edu/ugsmt/mbamim.html.

Core Courses

ADMN 639 **3 credits**
Multinational Financial Management

Refer to page 65 for a description of this course.

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

IMAN 601 **3 credits**
Strategic Management in a Global Environment

Refer to page 42 for a description of this course.

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

IMAN 615 **3 credits**
Foreign Investment and Strategic Alliances

Refer to page 42 for a description of this course.

IMAN 635 **3 credits**
The Public Sector in International Commerce

Refer to page 43 for a description of this course.

IMAN 640 **3 credits**
International Marketing Management

Refer to page 43 for a description of this course.

IMAN 645 **3 credits**
The International Legal and Tax Environment

Refer to page 43 for a description of this course.

IMAN 661 **3 credits**
Area Studies: Business Strategies for Europe

Refer to page 43 for a description of this course.

OMBA 601 **6 credits**
Organizational and Management Processes

Refer to page 35 for a description of this course.

OMBA 603 **6 credits**
The Marketing of New Ideas

Refer to page 35 for a description of this course.

OMBA 604 **6 credits**
Technology and Operations Management

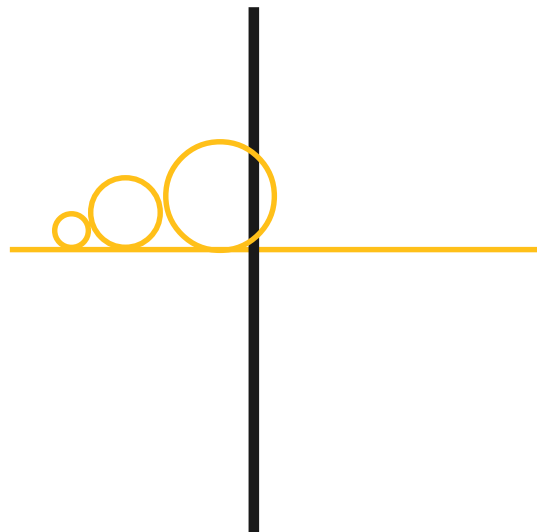
Refer to page 35 for a description of this course.

OMBA 605 **6 credits**
Economics of Management Decisions

Refer to page 35 for a description of this course.

OMBA 606 **6 credits**
Organizations and the External Environment

Refer to page 36 for a description of this course.



Master of Science in Management/ Master of Business Administration

The purpose of the dual Master of Science in Management (MSM) and the Master of Business Administration (MBA) degrees is to provide students with a path to pursue both breadth and depth study and to achieve two academic master's degrees from UMUC for 54 to 57 credits. There is shared curriculum content between the core of the Master of Science in Management and the Master of Business Administration (24 credits).

(After completion of the Executive Master of Science in Management, 18 additional credits are required for the Executive dual degree. See page 105 for more details.)

All requirements for both degrees must be completed within 7 years. All MBA work must be completed within 5 years. Additional information on the combined degree program can be found at www.umuc.edu/gsmt/mbamsm.html.

Program Director

Master of Science in Management/
Master of Business Administration

Theresa Marron-Grotsky, *Program Director*
tmarron-grotsky@umuc.edu

Meena Bipat, *Administrative Assistant*
mbipat@umuc.edu
Phone: 301-985-7710

Program Coordinators

Andie DiMarco (A-M)
adimarco@umuc.edu

Irina Ryland (N-Z)
iryland@umuc.edu

Degree Program

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

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

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

Degree Status

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

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 26) for information about the TOEFL and TWE examinations.

Provisional Status

Provisional status for the MSM may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Students may register for no more than

three graduate courses (9 credits) while in the provisional category. Those who maintain a 3.0 GPA during the completion of the 9 credits and who meet all entrance requirements are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement.

Provisional status for the MBA may be granted to students who fall slightly below the minimum grade-point requirement for degree status. Once admitted to this category, students are given an opportunity to demonstrate, by performance, their ability to succeed in graduate studies. Those who achieve a 3.0 GPA during completion of 6 MBA credits and who meet all entrance requirements are moved automatically to degree status. No courses may be repeated while a student is in provisional status. The

minimum admission requirements for provisional status are a bachelor's degree from a regionally accredited university or college, an undergraduate GPA of at least 2.5 on a 4.0 scale in the student's major area of study, submission of the official transcript from the bachelor's-degree-granting institution, and a personal statement.

The UMUC Graduate School reserves the right to request additional transcripts.

Decision-Pending Status

The decision-pending classification is short term and is meant for students who have not completed the admission process described above. Students may enroll in one of the following graduate courses before UMUC has received the official college transcript from the bachelor's-degree-granting institution: ADMN 601, ADMN 625, or ADMN 635. Students must receive an admission decision prior to subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

MBA students in decision-pending status can register for OMBA 600 MBA Orientation and/or UCSP 610 Library Skills.

Locations

Classes in the M.S. program usually meet in the evening, once a week during the fall and the spring semesters and twice a week during the summer session. (Students in online courses are expected to access their classes several times each week.) Core courses are scheduled at the following nine locations throughout the Maryland and Washington, D.C. area: Annapolis, downtown Baltimore, California, Catonsville, College Park, Leonardtown/Patuxent, Rockville/Shady Grove, Waldorf, and downtown Washington, D.C. Specialty track courses may require attendance at

selected sites because of enrollment requirements established by UMUC. Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations. MBA classes are offered online.

Program Structure from MSM to MSM/MBA

Students first complete the entire MSM degree program (36–39 credits) and meet all requirements for graduation. (A MSM degree will be granted upon completion of the MSM program at time of graduation application.) These MSM “alumni” can then earn an MBA degree (second actual degree document) by completing 18 credits of MBA work.

These credits are as follows:

- Seminar IV (OMBA 604D)—
Technology and Operations
Management

and

- Seminar VI (OMBA 606D)—
Organizations and the External
Environments

then

- Seminar III (OMBA 603D)—
The Marketing of New Ideas

or

- Seminar V (OMBA 605D)—
Economics of Management Decisions

Selection of Seminar III versus Seminar V must be approved by the Graduate School program director for the MSM program. Alumni of the marketing track must complete Seminar V; alumni of the finance track must complete Seminar III.

Program Structure from MBA to MSM/MBA

Students first complete the entire MBA degree program (42 credits) and meet all

requirements for graduation. (An MBA degree will be granted upon completion of the MBA program at time of graduation application.) MBA students who elect the dual degree program will complete three MSM track credits as part of Seminar VII of the MBA. MBA “alumni” can then earn an MSM degree (second actual degree document) by completing 12 additional credits of an MSM track; therefore, a total of 15 credits in an MSM track will be required. MBA students who also want the MSM degree must declare the dual MSM/MBA before the beginning of Seminar VII of the MBA.

Additional Requirements

All students are required to complete OMBA 604D and OMBA 606D. Students with a Marketing MSM are required to take OMBA 605D, and students with a Financial Management MSM are required to take OMBA 603D. All other students have the option of selecting either OMBA 603D or OMBA 605D.

Core Courses

OMBA 603 **6 credits**

The Marketing of New Ideas

Refer to page 35 for a description of this course.

OMBA 604 **6 credits**

Technology and Operations Management

Refer to page 35 for a description of this course.

OMBA 605 **6 credits**

Economics of Management Decisions

Refer to page 35 for a description of this course.

OMBA 606 **6 credits**

Organizations and the External Environment

Refer to page 36 for a description of this course.

Master of Science in Technology Management/ Master of Business Administration

Graduates with a Master of Science in Technology Management (TMAN) degree can also obtain a Master of Business Administration (MBA) degree. Students must first complete all degree requirements for the M.S. in Technology Management degree (TMAN) before they can earn an MBA. To obtain the MBA, students must take an additional 24 credits from the MBA curriculum as specified below. (Eighteen additional credits are required for the Executive dual degree. See page 105 for more details.) Students in technology management cannot take MBA coursework until they complete their M.S. degree.

As information becomes available, it will be posted at www.umuc.edu/gsm/mbatman.html.

Department Chair

John O. Aje, *Department Chair*
jaje@umuc.edu

Fran Baldwin, *Administrative Assistant*
fbaldwin@umuc.edu
Phone: 301-985-7824

Program Directors

Fred Betz, *Program Director*
fbetz@umuc.edu

Robert Ouellette, *Program Director*
rouellette@umuc.edu

Degree Program

Students in the dual TMAN/MBA program can choose to first complete the M.S. in Technology Management and then take additional credits to earn the MBA or complete the MBA and then take additional credits to earn the M.S. in Technology Management.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100 percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP 610 Library Skills for the Information Age within their first 6 credits of study.

Admission Requirements

A student may be admitted in one of four classifications: degree seeking, provisional, certificate, or decision pending.

For certificate requirements, see page 114.

The decision-pending classification is temporary while students await final approval of admission. Certificate status exists for students pursuing the graduate certificate program.

Degree Status

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

Note: Applicants educated in countries other than the United States and who are non-native speakers of English should refer to the section entitled International Applicants (page 26) for information about the TOEFL and TWE examinations.

Provisional Status

Provisional status may be granted to students who fall slightly below the criteria for degree status. Once admitted to this category, students are given an opportunity

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

Decision-Pending Classification

Decision-pending classification is short term and is meant for students who have not completed the admission process as described above. Students may enroll in one of the

following graduate courses before UMUC has received the official college transcript from the bachelor's-degree-granting institution: TMAN 611, TMAN 612, or TMAN 614. Students must receive an admission decision before subsequent enrollments. The UMUC Graduate School reserves the right to request additional transcripts.

MBA students in decision-pending status can register for OMBA 600 MBA Orientation and/or UCSP 610 Library Skills.

Locations

Classes in the M.S. in Technology Management program are currently offered at College Park, Fort Meade, the University System of Maryland Shady Grove Center in Rockville, and Annapolis. Students should check the current graduate *Schedule of Classes* to determine when courses will be offered at specific locations.

Program Structure TMAN to TMAN/MBA

The dual degree program will allow technology management students to obtain breadth and depth of study from the combined degrees. The dual degree program is designed to provide a program of study that focuses on the theories and skills needed to manage people and resources within an organization.

Technology management students must complete the following 6 credit seminars to obtain the MBA degree:

- OMBA 602D—The Dynamics of Individuals and Groups at Work
- OMBA 603D—The Marketing of New Ideas
- OMBA 605D—Economics of Management Decisions
- OMBA 606D—Organizations and External Environment

See *Executive MBA* for XMBA course descriptions.

All requirements for both degrees must be completed within 7 years. All MBA work must be completed within 5 years.

Core Courses

OMBA 602 **6 credits**

The Dynamics of Individuals and Groups at Work

Please refer to page 35 for a description of this course.

OMBA 603 **6 credits**

The Marketing of New Ideas

Please refer to page 35 for a description of this course.

OMBA 605 **6 credits**

Economics of Management Decisions

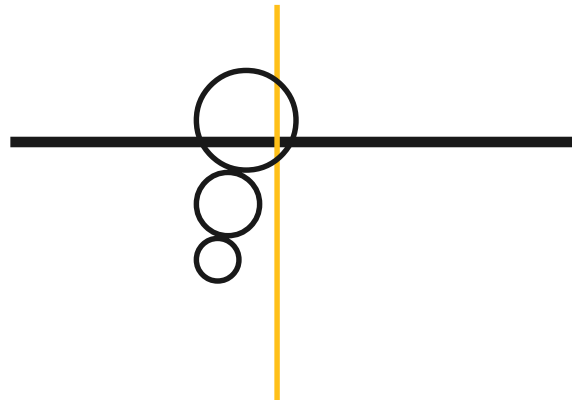
Please refer to page 35 for a description of this course.

OMBA 606 **6 credits**

Organizations and the External Environment

Please refer to page 36 for a description of this course.

For *Executive MBA* seminars, see page 95.



Executive Master of Business Administration

The Executive Master of Business Administration is a 42-credit graduate degree in a format tailored to busy professionals. This accelerated 21-month program enables career minded individuals with at least 5 years of management experience to make full use of their management skills while meeting degree requirements. Courses are delivered through a combination of face-to-face Saturday seminars and online study. Special features of the Executive Master of Business Administration program include an integrated curriculum focusing on real world applications, a global business perspective, a distinctive closing strategy project with a corporate sponsor, management assessment and leadership development through the National Leadership Institute, and an international trip.

Composition of the Executive Class

Each class has approximately 25–30 participants who progress through the program as a group. The professional backgrounds of the class members is vital to the learning experience and is further enhanced through a variety of teaching methods. In addition, group participation and interaction over the course of the seminars is designed to contribute significantly to a broader understanding of organizational issues.

Admission Requirements

Participants are selected on the basis of the following criteria: a minimum of five years of management experience; a current position as a mid- or senior-level manager; a bachelor's degree from a regionally accredited university or college; and a 3.0 overall GPA on a 4.0 scale for degree-seeking participants or at least a 2.5 GPA in the major area of study for provisional participants. In addition, candidates must submit a personal statement of goals and objectives, two letters of reference, and an official

transcript from the bachelor's-degree-granting institution. Qualified candidates will have a personal interview with the program director. All participants must have access to a computer and the Internet, and a working knowledge of software programs as described on page 29. The UMUC Graduate School reserves the right to request additional transcripts.

Required Library Research Skills Course

To ensure participants are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP 610 or USCP 610E Library Skills for the Information Age within their first 6 credits of study.

Application

A complete application consists of an application form; the official transcript from the bachelor's-degree-granting institution; a personal statement that

Program Directors

Salvatore J. Monaco, *Executive Director, Office of Executive Programs*
smonaco@umuc.edu

Helen Carapetian, *Administrative Assistant*
hcarapetian@umuc.edu
Phone: 301-985-7069

Mary Ann Spilman, *Director, Executive Management Programs*
mspilman@umuc.edu

Stephen V. Versace, *Director, Executive Technology Programs*
sversace@umuc.edu

Coordinator

Jane Goldberg, *Coordinator*
jgoldberg@umuc.edu

indicates experience, current employment, and goals that may be fulfilled through participation in the program; two letters of reference; and the application fee.

Fees

The below fees were in effect at the time of publication and are subject to change.

Application fee	\$50
Tuition*	\$4,650 per seminar

**Includes textbooks and fees. Includes international trip, except airfare.*

Tuition is payable before the start of each seminar.

A deposit of \$500 is required after applications are accepted to reserve a place in the class. The balance of tuition, \$4,150, is due before the start of Seminar I (XMBA 601).

Neither tuition remission for University System of Maryland employees nor tuition remission under the Golden ID program may be used for the Executive Master of Business Administration program.

Certificate Program

The Executive Master of Business Administration program has three certificates related to this discipline. See page 108 for more information.

Location

Face-to-face classes for each Executive MBA are held at a single location in the Washington, D.C. metropolitan area throughout the 21-month program. This location may be the UMUC Inn and Conference Center in MD, the USM Shady Grove Center in Rockville, MD, or another facility in Northern Virginia or Washington, DC.

Prospective candidates should check the executive program Web site at <http://info.umuc.edu/executiveprograms> for the location of the next seminar.

Format

The Executive Master of Business Administration is an accelerated 21-month program using the seminar format. Instruction includes lectures, case studies, structured discussions, guest speakers, videos, computer exercises, written projects, and oral presentations. The classes are held every other Saturday from 8:30 a.m. to 5 p.m. and are supplemented with UMUC's online (Web-based) instruction to provide maximum flexibility and convenience.

The program consists of seven seminars. Each seminar includes examinations, papers, and/or presentations. The end-of-program project in Seminar VII is the capstone learning experience that provides participants with a unique opportunity to plan and complete a strategic or operational business plan for a sponsor organization.

Seminar I

XMBA 601 **6 credits**

Overview of Management Theory, Strategic Thinking, and Global Management

This seminar introduces the concepts and theories that are essential building blocks of management thinking. Topics covered are systems thinking, the competitive structure

of industry, technology trends, the future of organizations, and global challenges.

Participants will have an opportunity for leadership assessments by the National Leadership Institute and will receive feedback on presentation style and quality.

Seminar II

XMBA 602 **6 credits**

Organizational Leadership, Management of Human Resources, and Business Ethics

This seminar addresses issues that confront managers working with diverse populations in a period of rapid technological change. The focus is on managing human resources through organizational change, including understanding and affecting organizational cultures and establishing and maintaining an ethical climate. It introduces strategies and methods for aligning individual interests and organizational needs in order to reach organizational goals. Participants will evaluate how individual, group, organizational, and societal outcomes are affected by the nature of work and the perceived value and meaning of work. Through self assessment instruments, case analyses, exercises, simulations, and discussions, participants will analyze and practice communication skills and decisions that motivate and effectively organize individuals and groups.

Seminar III

XMBA 603 **6 credits**

Marketing, Entrepreneurship, and New Product Development

This seminar focuses on business development strategies from the perspective of customer needs and preferences. It introduces market research approaches, product and service design processes and life cycles, and sources of venture capital. Through workshops, team projects, and case studies, participants will develop effective marketing programs that recognize the increasing importance of electronic commerce as a distribution channel.

Seminar IV

XMBA 604 **6 credits**

Technology and Operations Management

This seminar focuses on the latest information technologies and operations management techniques that enable an organization to operate around the world and around the clock. It introduces tools that managers use to measure operational efficiency and effectiveness, including statistical process control, decision trees, forecasting techniques, expert systems, and organizational benchmarking. Participants will practice effective project management techniques important to introducing new products and analyzing and improving an organization's processes.

Seminar V

XMBA 605 **6 credits**

Financial Systems and Management Accounting

This seminar focuses on economic decision making and the techniques and tools managers use to analyze the financial performance of their organizations. Performance measurement techniques include economic value added (EVA™), the balanced scorecard, open-book management, and activity-based costing. The theory of constraints is introduced to analyze the value an organization provides to the customer. Other tools are used to value intellectual property and whole businesses for purposes of joint ventures, mergers, or acquisitions. In assessing the broader economic environment of an organization, participants will analyze the changing global economy, including the evolution of financial markets in response to rapidly expanding worldwide investment opportunities.

Seminar VI

XMBA 606 **6 credits**

International Business, Trade, and Business Law

This seminar provides insight into how various strategic facets must be managed in the global context of trading and regulatory

systems and the growing concerns about national competitive advantage. Participants will address the impact on corporate decision making of laws, regulatory structures, and public policies at the local, state, national, and international levels. In addressing national competitive advantage, participants will consider the impact of technology innovation, international trade, and business and antitrust laws on business organizations.

Seminar VII

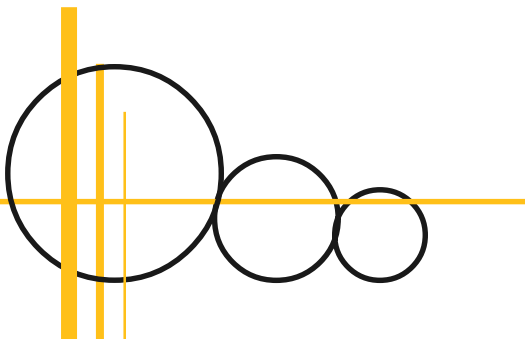
XMBA 607

6 credits

Strategy and Sponsored Project

In this seminar, participants are teamed with sponsoring organizations to develop a strategic action plan that integrates management techniques and methodologies covered in the previous seminars. Through their focus on strategic models, strategy formula-

tion and implementation, organizational assessment, and the creation of business plans, participants deepen their insight into strategic thinking and practical application. Working in teams, participants develop business plans for their sponsoring organizations that may include a new market entry strategy, a product development project, or an organizational assessment with appropriate change strategy.



Executive Master of Science in Management

The Executive Master of Science in Management is a 36-credit general management program designed to increase the knowledge, skills, and effectiveness of mid-level and senior managers. It provides in-depth treatment of such topics as organizational communication, leadership, globalization, financial management, strategy development and implementation, change management, information systems, decision making, and other vital topics. Candidates must have at least 5 years of management/business experience and commit to an extensive part-time study schedule over an 18-month period. Classes are scheduled on Saturdays to accommodate busy professional work schedules.

Note: The Executive Master of Science in Management is no longer accepting applications. Please review the other Executive Programs for an alternate selection, including the Executive MBA.

Composition of the Executive Class

Each class has approximately 25 participants who progress through the program as a group. The professional backgrounds of the class members is vital to the learning experience and is further enhanced through a variety of teaching methods. In addition, group participation and interaction over the course of the seminars is designed to contribute significantly to a broader understanding of organizational issues.

Admission Requirements

Participants are selected on the basis of the following criteria: a minimum of five years of management experience, a current position as a mid- or senior-level manager, a bachelor's degree from a regionally accredited university or college, and a 3.0 overall GPA on a 4.0 scale for degree-seeking participants or at least a 2.5 GPA in the major area of study for provisional participants. In addition, candidates must have a personal statement of goals and objectives, an official transcript from

the bachelor's-degree-granting institution, a personal interview with the program director, access to a computer and the Internet, and a working knowledge of software programs as described on page 29. The UMUC Graduate School reserves the right to request additional transcripts.

Required Library Research Skills Course

To ensure participants are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP 610 or USCP 610E Library Skills for the Information Age within their first 6 credits of study.

Application

A complete application consists of an application form; the official transcript from the bachelor's-degree-granting institution; a personal statement that indicates experience, current employment, and goals that may be fulfilled through participation in the program; and the application fee.

Program Directors

Salvatore J. Monaco, Executive Director,
Office of Executive Programs
smonaco@umuc.edu

Helen Carapetian, Administrative Assistant
hcarapetian@umuc.edu
Phone: 301-985-7069

Mary Ann Spilman, Director,
Executive Management Programs
mspilman@umuc.edu

Stephen V. Versace, Director,
Executive Technology Programs
sversace@umuc.edu

Coordinator

Jane Goldberg, Coordinator
jgoldberg@umuc.edu

Fees

The below fees were in effect at the time of publication and are subject to change.

Application fee	\$50
Tuition*	\$21,096

**Includes the cost of tuition, books, and instructional materials.*

Tuition is payable on the following schedule:

\$5,274	prior to Seminar I
\$5,274	prior to Seminar II
\$5,274	prior to Seminar III
\$5,274	prior to Seminar IV

A deposit of \$500 is required after applications are accepted to reserve a place in the class. The balance of tuition, \$4,774, is due before the start of Seminar I.

Neither tuition remission for University System of Maryland employees nor tuition remission under the Golden ID program may be used for the Executive Master of Science in Management program.

Location

On-site classes for the Executive Master of Science in Management are held at a single

location in the Washington, D.C. metropolitan area throughout the 18-month program. This location may be the UMUC Inn and Conference Center in Adelphi, MD, the USM Shady Grove Center in Rockville, MD, or another facility in northern VA or Washington, D.C.

Prospective candidates should check the executive program Web site at <http://info.umuc.edu/executiveprograms> for the location of the next seminar.

Format

The Executive Master of Science in Management is an accelerated 18-month program using the seminar format. Instruction includes lectures, case studies, structured discussions, guest speakers, videos, computer exercises, written projects, and oral presentations. The seminars are held from 8:30 a.m. to 5 p.m. on Saturdays. Approximately three hours of Web-based instruction are also provided.

The program consists of four seminars. Each seminar includes examinations, papers, and/or presentations. The end-of-program project is the capstone learning experience that provides participants with a unique opportunity to plan and complete an industry and organizational analysis and to develop sound recommendations for change.

Seminar I

ADMN 691 **9 credits**

Contemporary Methods of Organizational Inquiry and Essential Management Skills Development

This seminar incorporates a variety of topics designed to provide participants with essential skills in analysis, strategic and operational planning, management, research, and interpersonal relations. The philosophy-of-science component of this seminar enables participants to recognize the theoretical imperatives that shape and

influence management actions. The nature-of-organizations module presents an overview of contemporary issues and organizational theories affecting organizational technology, change, growth, ethics, structure, and globalization efforts. The team-building portion of the module enhances participants' self-awareness which will benefit them in the completion of the graduate program and in their work settings. The remainder of the seminar develops participants' expertise in the use and application of information management systems and research methods. The overall content prepares participants to complete the remaining seminars and end-of-program project, while developing skills essential to effective functioning in a complex and changing environment.

Seminar II

ADMN 692 **9 credits**

Managing in the Strategic Environment

In large measure, an organization's success is determined by its ability to respond to driving forces in the organization's internal and external environments. In this seminar, participants examine these forces and develop appropriate strategic responses based upon their assessment of critical factors in the organization's environments. This seminar builds upon the organizational context and general management themes of Seminar I. The seminar begins with an introduction to relevant economic, accounting, and systemic principles, followed by modules in which participants solve problems and cases dealing with financial, marketing, and general organizational strategy, with an emphasis on the interrelationship of issues within these areas.

Seminar III

ADMN 693 **9 credits**

Managing the Internal Environment

An organization's ability to remain proactive while responding to continual change in its environment depends, in large part, on its

ability to effectively engage and manage its internal resources. This seminar builds upon the general management themes of Seminar I and the strategy development/external environment themes of Seminar II. Several modules address issues that confront managers working with diverse populations in a technological age: organizational behavior, communications, interpersonal relations, and cross-cultural challenges; leadership, including managing change, understanding organizational culture, and establishing an ethical climate; domestic and international approaches to conflict management and negotiation; legal issues in the business environment; current human resource developments; and technology management. Case studies, self-assessment instruments, theoretical analyses, simulations, and computer applications provide participants with the necessary critical thinking and practical tools for successfully managing the challenges of the internal environment.

Seminar IV

ADMN 694 **9 credits**

The Capstone Experience and Integrative Project

In the capstone seminar, the applied behavioral aspects and the impact of the continuous changes affecting post-industrialized society are linked to decision making, a key organizational function. Various models of decision making, problem solving, and creativity are related to effective, practical, and applied decision making in organizations. This seminar also explores executive leadership, corporate communications, learning organizations, visioning, strategic thinking, and the dynamics of entrepreneurship. An in-depth case analysis, complete with specific operating plans for the product/service, concludes the seminar.

Executive Master of Science in Technology Management

Technology management encompasses all aspects of management associated with the identification, development, acquisition, and application of technologies for the production of goods and services. Such management is vital to both private-sector organizations, which must face the challenges associated with the fast pace of technological change, and the public sector, which has an integral and defining role in providing regulations and policy that will shape the future of U.S. technological competitiveness.

The Executive Master of Science in Technology Management program covers three important competency areas in a technology driven, globally competitive business environment: strategic management, systems management, and operations management. The executive program seminars are designed to introduce and develop these competencies, with one seminar focusing on each key area and a fourth, capstone seminar integrating the lessons and objectives of the previous three. This 36-credit program is completed in an 18-month period.

Composition of the Executive Class

Each class is comprised of approximately 25 executives who progress through the program as a group. The organizational experience of the class members is vital to the learning experience and is further enhanced through a variety of teaching methods. Each participant is expected to actively participate, and the interaction afforded by the seminars is designed to significantly contribute to a broader understanding of organizational issues in increasingly technical settings. During this 18-month master's program, classes are held on Saturdays to accommodate professional work schedules.

Admission Requirements

Participants are selected on the basis of the following criteria: a minimum of five years of business or management experience; a current position as a mid- or senior-level manager; a bachelor's degree from an accredited university or college in computer science, the physical sciences, engineering, or business; a GPA of 3.0 on a 4.0 scale for

degree-seeking participants or at least a 2.5 GPA in the major area of study for provisional status; a personal interview with the program director; submission of the official transcript from the bachelor's degree-granting institution; a personal statement of goals and objectives; access to a computer and the Internet; and a working knowledge of software programs as described on page 29. The UMUC Graduate School reserves the right to request additional transcripts.

Required Library Research Skills Course

To ensure participants are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP 610 or USCP 610E Library Skills for the Information Age within their first 6 credits of study.

Application

A complete application consists of an application form; the official transcript from

Program Directors

Salvatore J. Monaco, *Executive Director*,
Office of Executive Programs
smonaco@umuc.edu

Helen Carapetian, *Administrative Assistant*
hcarapetian@umuc.edu
Phone: 301-985-7069

Mary Ann Spilman, *Director*,
Executive Management Programs
mspilman@umuc.edu

Stephen V. Versace, *Director*,
Executive Technology Programs
sversace@umuc.edu

Coordinator

Jane Goldberg, *Coordinator*
jgoldberg@umuc.edu

the bachelor's-degree-granting institution; a personal statement that indicates experience, current employment, and goals that may be fulfilled through participation in the program; and the application fee.

Fees

The below fees were in effect at the time of publication and are subject to change.

Application fee	\$50
Tuition*	\$21,096

*Includes the cost of tuition, books, and instructional materials.

Tuition is payable in the following manner:

\$5,274	prior to Seminar I
\$5,274	prior to Seminar II
\$5,274	prior to Seminar III
\$5,274	prior to Seminar IV

A deposit of \$500 is required after applications are accepted to reserve a place in the class. The balance of tuition, \$4,774, is due before the start of Seminar I.

Neither tuition remission for University System of Maryland employees nor tuition remission under the Golden ID program

may be used for the Executive Master of Science in Technology Management.

Location

All classes in the Executive Master of Science in Technology Management program are held at the same location in the Washington, D.C. metropolitan area throughout the 18-month program. This location may be the UMUC Inn and Conference Center in Adelphi, MD, the USM Shady Grove Center in Rockville, MD, or another facility in northern VA or Washington, DC.

Prospective candidates should check the executive program Web site at <http://info.umuc.edu/executiveprograms> for the location of the next seminar.

Format

The Executive Master of Science in Technology Management is an accelerated 18-month program using the seminar format. Instructional methodologies include lectures, case studies, structured discussions, guest speakers, videos, computer exercises, written projects, and oral presentations. Seminars are held from 8:30 a.m. to 5 p.m. on Saturdays. Web-based instruction is provided as a convenience to students to supplement and enhance Saturday classes.

The program consists of four seminars, varying from 11 to 16 weekends in length. Each seminar includes examinations, papers, and/or presentations. The end-of-program project is the capstone learning experience. The project provides participants with a unique opportunity to develop sound approaches to specific technology management issues.

Students are encouraged to bring laptop computers to class.

Seminar I

TMAN 691 **12 credits**

Strategic Management of Technology and Innovation

This first seminar provides the participants with the knowledge, skills, and techniques needed to develop and continuously

evaluate appropriate technology strategies for their organizations. Participants are first given an overview of technology management as an academic discipline and professional practice. The critical role of the government in creating an environment that stimulates and nurtures creativity and innovation is discussed. This module is followed by an introduction to financial management for technology managers. The participants are introduced to the preparation and application of a diverse set of financial tools that are used to undertake the valuations of capital, intellectual assets and property, and intangibles.

The strategic role of marketing as an integrated part of new technology-based products and services is discussed next. This module focuses on the issues of competitive strategy, pricing, customer service, market differentiation, and new-product launches. Participants also learn qualitative and quantitative market research techniques and the principles of prototyping and market experimentation.

The last module in this seminar discusses strategic management technology and innovation. This module focuses on linking technology policy with corporate strategy and the identification of technology options appropriate for the business or organizational strategy being executed. The processes of entrepreneurship and intrapreneurship from the standpoint of various organizational functions and levels, and how these processes can be promoted through effective management, are discussed.

This seminar also prepares participants to work effectively in teams by providing them with skills and knowledge for interpersonal communication, group processes, leadership, and team management.

Seminar II

TMAN 692 **9 credits**

Program Management and Operations Research

In 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. Systems are the means for attaining strategic goals and objectives. In this seminar, participants learn how to design and manage organizational systems that can effectively adapt to a rapidly changing, highly competitive, technology-driven environment. They acquire the requisite skills for team building and leadership and 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. In the next module, the fundamentals of systems analysis, development, acquisition, and management are introduced.

During this seminar, participants are introduced to software for information systems, decision-support systems, and expert systems that they will use throughout this and the following seminars to formulate and solve problems in technology management. The concept of electronic commerce is introduced as a strategic tool in the delivery of technology to customers with an emphasis on the development and use of electronic value chains between customers, distributors, and suppliers. Emphasis is placed on developing a business strategy for electronic commerce as well as specific tools such as electronic data interchange (EDI) and real-time satellite tracking of shipments. Issues in electronic commerce such as network security and firewalls, encryption, home banking, pricing, intellectual property, and international standards are discussed.

Seminar III

TMAN 693 **9 credits**

Operations Management

Every member of an organization serves someone else—the customer. Effective operations management aims at serving the needs of both internal and external customers with consistently high-quality and continu-

ously improving products and services. Emphasis is placed on improving operational effectiveness to gain competitive advantage.

Participants learn operations methods and skills that are used for facility planning, inventory control, logistics management, capacity planning, material requirements planning, and demand forecasting. Applications for both manufacturing and service organizations are emphasized.

A module on productivity and quality management provides techniques for mapping both functional and cross-functional processes such as activity-based costing, value-added analysis, and flow charting. In addition, methodologies such as total quality management and business process reengineering are discussed. Finally, a module on human resource issues in technology-based organizations covers critical organizational and leadership issues facing managers today.

Seminar IV

TMAN 694

6 credits

Capstone

This final seminar in the executive master's program is designed as a capstone segment, integrating the techniques, skills, and methods developed during the first three seminars. This seminar continues to build the skills needed by top management to develop and implement technology-based strategies. Emphasis is placed on the development of a cohesive, market-focused strategy to provide a sustainable competitive advantage for the firm.

Participants are introduced to the concepts, practices, and critical issues in international business strategy with a focus on developing international markets for high-technology products and services. The principles of business and contract law are presented with the objective of identifying legal issues that confront managers in dynamic organizations and analyzing methods to develop effective solutions. Integrating case studies are

provided, illustrating the fundamental principles embodied in the strategic management of technology and innovation.

Participants participate in field trips (during weekdays) to several firms and government organizations. These trips have two objectives: First, to gain first-hand insight and understanding of the ways successful corporations link technology strategy to corporate strategy and craft a vision to create a competitive advantage for the firm; second, to better understand the government role in the development of policy that affects and shapes U.S. technology development. Emphasis is placed on identifying those characteristics and attributes that distinguish highly successful firms and effective government programs.

An end-of-seminar presentation will be developed and presented by student teams. The focus of the briefing will be on the application of material studied during the seminar.

Executive Master's Program in Information Technology

Information technology management encompasses all aspects of management associated with the planning, design, development, acquisition, implementation, and maintenance of both computer systems and telecommunications for the support of an organization's products and services. The Executive Master's Program in Information Technology is designed around three general competency areas and a specialty track; each is important for managers in a technology-driven, globally competitive business environment. Seminars I, II, and IV address the areas of information management skills, new and emerging information technologies, and information technology operations. Seminar IV also serves as a capstone to integrate the lessons and objectives of the program. The third seminar offers a choice of track focusing on the specific competencies necessary for either computer systems management or telecommunications management. Consequently, participants may pursue either a degree in Computer Systems Management or Telecommunications Management. This 36-credit program is completed in an 18-month period. (Pending approval, graduates will receive a Master of Science in Information Technology.)

Composition of the Executive Class

Each Executive Master's Program in Information Technology class, with an average of 30 participants, progresses through the program as a group (with the exception of Seminar III specialty tracks). The organizational and technical experience of the class members is vital to the learning experience and is further enhanced through a variety of teaching methods. Active participation is expected from each member of the group. The interaction afforded by the seminars is designed to contribute significantly to a broad understanding of organizational solutions in an increasingly technological environment.

Admission Requirements

Participants are selected on the basis of the following criteria: a minimum of 5 years of business or management experience; a current position as a mid- or senior-level manager; a bachelor's degree from a regionally accredited university or college in information technology, engineering, or software engineering; and a 3.0 overall GPA

on a 4.0 scale for degree-seeking participants or at least a 2.5 GPA in the major area of study for provisional participants. In addition, candidates must have a personal statement of goals and objectives, an official transcript from the bachelor's-degree-granting institution, a personal interview with the program director, access to a computer and the Internet, and a working knowledge of software programs as described on page 29. The UMUC Graduate School reserves the right to request additional transcripts.

Required Library Research Skills Course

To ensure participants are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP 610 or USCP 610E Library Skills for the Information Age within their first 6 credits of study.

Program Directors

Salvatore J. Monaco, *Executive Director*,
Office of Executive Programs
smonaco@umuc.edu

Helen Carapetian, *Administrative Assistant*
hcarapetian@umuc.edu
Phone: 301-985-7069

Mary Ann Spilman, *Director*,
Executive Management Programs
mspilman@umuc.edu

Stephen V. Versace, *Director*,
Executive Technology Programs
sversace@umuc.edu

Coordinator

Jane Goldberg, *Coordinator*
jgoldberg@umuc.edu

Application

A complete application consists of an application form; the official transcript from the bachelor's-degree-granting institution; a personal statement that indicates experience, current employment, and goals that may be fulfilled through participation in the program; and the application fee.

Fees

The costs for the Executive Master's Program in Information Technology are as follows:

Application fee	\$50
Tuition*	\$24,300

*Includes the cost of tuition, books, and instructional materials.

Tuition is payable in the following manner:

\$6,075 prior to Seminar I*
\$6,075 prior to Seminar II
\$6,075 prior to Seminar III
\$6,075 prior to Seminar IV

*A deposit of \$500 is required after applications are accepted to reserve a place in the class. The balance of tuition, \$5,575, is due before the start of Seminar I.

Neither tuition remission for University System of Maryland employees nor tuition remission under the Golden ID program may be used for the Executive Master's Program in Information Technology program.

Location

All classes in the Executive Master's Program in Information Technology are held at the same location in the Washington, D.C. metropolitan area throughout the 18-month program. This location may be the UMUC Inn and Conference Center in Adelphi, MD, the USM Shady Grove Center in Rockville, MD, or another facility in northern VA or Washington, D.C.

Prospective candidates should check the executive program Web site at <http://info.umuc.edu/executiveprograms> for the location of the next seminar.

Format

The Executive Master's Program in Information Technology is an accelerated 18-month program using the seminar format. Instructional methodologies include lectures, case studies, structured discussions, guest speakers, videos, computer exercises, written projects, and oral presentations. Seminars are held from 8:30 a.m. to 5 p.m. Web-based instruction is provided as a convenience for students to supplement and enhance the Saturday classes.

The program consists of four, 9-credit seminars. Each seminar includes examinations, papers, and/or presentations.

Hardware/Software Requirements

All participants are required to have a notebook computer with the following minimum configuration:

- Pentium processor or equivalent
- 64 MB ram
- 2.0 gb hard drive
- 3.5" floppy drive (external or internal)
- CD-ROM drive (external or internal)
- 56 Kbps modem (pcmcia or internal)

- Two pcmcia slots
- MS Windows 95 (98)® and MS Office 97 (2000) Professional®
- 10/100 Base T Network Interface card

Seminar I

XMIT 691

9 credits

Strategic Management of Information Technology

Seminar I presents an overview of the information technology (IT) industry. Structures, purposes, and basic components of information systems used in business and government organizations are explored, both from a hardware and a software perspective. IT trends such as computer communication convergence are analyzed. Issues related to technology, computer operations, regulation, policies, and career paths are examined.

A second major focus of the seminar is to examine strategic planning for new or expanded IT systems. Strategic planning principles underpinning successful IT systems are identified and analyzed. Particular attention is paid to the need for alignment of business and IT goals and the use of IT for competitive advantage. Principles and practices related to the effective management of people and teams, and to the creation of an ethical workplace, are introduced in the seminar and are emphasized throughout the program.

The final focus of the seminar is on interpersonal communications, group processes, and leadership. In Seminar I, student teams present a preliminary business plan for a new IT system or venture. One required component of the business plan is a set of specific "user" requirements that support the organization's identified needs.

Seminar II

XMIT 692

9 credits

Current and Emerging Technologies

First, methods and tools for implementing continuous process improvement and fundamental elements of project management and financial control are explored. Information technologies are then examined as individual systems from both a conceptual and an operational capability perspective.

The various computer systems architectures are introduced and the system and software life cycle is studied. The importance of distributed computing (client/server) in today's business and government organizations is discussed. The attributes, strengths, and limitations of current telecommunication networks are examined, including their data, voice, and multimedia transferability.

The capabilities and uses of the current emerging information technologies are also examined, including their potential to help achieve competitive advantage. Among the technologies introduced are collaborative systems (for example, Intranets), data warehousing, data mining, knowledge management, network computing, and electronic commerce. Also analyzed are the critical elements involved in deciding how and when to adopt emerging technologies.

Seminar III

XMIT 693

9 credits

Computer and Telecommunication Systems (pending approval)

Seminar III examines computer and telecommunications systems from operational capability and management perspectives. The capabilities and uses of current emerging information technologies are examined, including their potential to help achieve competitive advantage.

Various computer systems architectures and software management issues are introduced and studied. Among the technologies introduced are host computers, distributed and embedded systems, operating systems, special purpose machines, and open system standards.

Software topics include programming languages, software development, software project management, advanced applications, and related subjects such as security.

Students also examine specialized areas of telecommunications systems management. Topics include enterprise telecommunications networks, such as local area networks, the public switched telephone network, public and private wide area networks, internet, broadband networks, network

management and design, and wireless telecommunications networks.

Students assess telecommunications systems requirements for various types of information source content such as voice, data, multimedia, and required performance measures, that is, Quality of Service (QoS). Business applications for these services are also analyzed.

Seminar IV

XMIT 694

9 credits

Information Technology Implementation and Operations

Along with planning, IT managers implement and, on a daily basis, manage system operations. This seminar examines implementation and operational issues and ideas. First explored are important implementa-

tion issues such as information risk assessment and security, information acquisition, and systems integration. Then the focus shifts to systems management and control. Program participants review current issues and trends in the IT industry, consider the concepts and best practices related to change management, and investigate the area of technological forecasting.



Dual Degrees in the Executive MBA Program

(See also Dual Degrees for the Online MBA)

Graduates of selected UMUC Masters programs (whether obtained through Executive format or through the regular program format) can also obtain a Master of Business Administration (MBA) degree through the accelerated format of Executive Programs. These dual degree students may earn two masters degrees for a total of 54 to 60 credits, rather than the 78 to 81 credits that would be needed if two masters programs were completed separately. Students must complete all degree requirements for the first masters program before they can earn an MBA. To obtain the MBA, students must then complete 18–24 additional credits from the Executive MBA program. The MBA dual degree option through Executive Programs is available to **any** graduate of the following UMUC programs: Master of Science in Management, Masters of International Management, or Master of Science in Technology Management.

All of the requirements for both degrees must be completed within 7 years. All MBA degree course work must be completed within 5 years.

Dual Degree Program

Students who first complete an entire UMUC Masters program (36–42 credits) will be able to earn a second MBA degree by completing only 18–24 additional credits. Graduates of UMUC masters programs are eligible for admission to the Executive MBA program, regardless of whether their first degree was obtained in the Executive Program. Participants who wish to complete their *first* masters degree through Executive Programs must meet the eligibility requirements specified for that Executive Program.

(See pages 94–104 for Executive Program descriptions).

Executive MBA graduates are eligible for dual degrees in the regular programs for Master of International Management (see page 41) and Master of Science in Management (see page 61).

Program Format

The Executive MBA is offered in an accelerated format that combines face-to-face seminars with online study. Emphasis

is placed on speaking and formal presentation skills in the face-to-face seminars and on writing and analytical skills in the online course work.

See the Executive MBA description, page 94 for more details.

Required Library Research Skills Course

To ensure that participants are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. As of fall 1998, all students must successfully complete USCP 610 or USCP 610E, Library Skills for the Information Age, within their first 6 credits of study.

Admission Requirements

The MBA dual degree option through Executive Programs is available to any graduate of the following UMUC programs:

- Master of Science in Management
- Master of International Management

Program Director

Salvatore J. Monaco, *Executive Director,*
Office of Executive Programs
smonaco@umuc.edu

Helen Carapetian, *Administrative Assistant*
hcarapetian@umuc.edu
Phone: 301-985-7069

Mary Ann Spilman, *Director,*
Executive Management Programs
mspilman@umuc.edu

Stephen V. Versace, *Director,*
Executive Technology Programs
sversace@umuc.edu

Coordinator

Jane Goldberg, *Coordinator*
jgoldberg@umuc.edu

- Master of Science
in Technology Management

Degree Status

Graduates of any of the above UMUC programs are admitted to the MBA program as dual degree seeking students.

Program Structure for Technology Management/ Master of Business Administration (TMAN/ MBA) Dual Degree

Students must first complete the entire Master of Science in Technology Management (TMAN) degree program (36 credits) and meet all the requirements for graduation. Upon application, students will be awarded a TMAN degree. The TMAN “alumni” can then earn an MBA degree (second actual degree document) by completing 18–24 hours in the Executive MBA program.

- Students who have completed the Executive Program TMAN degree will take these courses, which are 6 credits each (18 additional credits):
 - Seminar 602 (XMBA 602) Organizational Leadership, Management of Human Resources, and Business Ethics
 - Seminar 605 (XMBA 605) Financial Systems and Management Accounting
 - Seminar 606 (XMBA 606) International Business, Trade and Business Law

- Students who have completed the regular TMAN degree will take these courses, which are 6 credits each (24 additional credits):
 - Seminar 602 (XMBA 602) Organizational Leadership, Management of Human Resources, and Business Ethics
 - Seminar 603 (XMBA 603) Marketing, Entrepreneurship, and New Product Development
 - Seminar 605 (XMBA 605) Financial Systems and Management Accounting
 - Seminar 606 (XMBA 606) International Business, Trade and Business Law

Program Structure for Master of International Management/ Master of Business Administration (MIM/MBA) Dual Degree

Students must first complete the entire Master of International Management (MIM) degree program (36–39 credits) and meet all the requirements for graduation. Upon application, students will be awarded an MIM. The MIM “alumni” can then earn an MBA degree (second actual degree document) by completing 18 hours in the Executive MBA program. The required MBA seminars will depend on the MIM specialty track, as follows:

- Students who have completed the Executive MIM program will take these three courses, which are 6 credits each:
 - Seminar 603 (XMBA 603) Marketing, Entrepreneurship, and New Product Development
 - Seminar 604 (XMBA 604) Technology and Operations Management
 - Seminar 605 (XMBA 605) Financial Systems and Management Accounting
- Students who have completed the International Commerce and International Marketing tracks of the MIM will take these three courses, which are 6 credits each:
 - Seminar 601 (XMBA 601) Overview of Management Theory, Strategic Thinking, and Global Management
 - Seminar 604 (XMBA 604) Technology and Operations Management
 - Seminar 605 (XMBA 605) Financial Systems and Management Accounting
- Students who complete the International Finance track of the MIM will take these courses, which are 6 credits each:
 - Seminar 601 (XMBA 601) Overview of Management Theory, Strategic Thinking, and Global Management
 - Seminar 603 (XMBA 603) Marketing, Entrepreneurship, and New Product Development
 - Seminar 604 (XMBA 604) Technology and Operations Management

Program Structure for Master of Science in Management/ Master of Business Administration (MSM/MBA) Dual Degree

Students must first complete the entire Master of Science in Management (MSM) degree program (36–39 credits) and meet all

the requirements for graduation. Upon application, students will be awarded an MSM. The MSM “alumni” can then earn an MBA degree (second actual degree document) by completing 18 hours in the Executive MBA program. The required MBA seminars will depend on the MSM specialty track, as follows:

- Students who have completed the Executive MSM program OR the Marketing track of the MSM will take these courses, which are 6 credits each:
 - Seminar 604 (XMBA 604) Technology and Operations Management
 - Seminar 605 (XMBA 605) Financial Systems and Management Accounting
 - Seminar 606 (XMBA 606) International Business, Trade and Business Law
- Students who have completed the Finance track of the MSM will take these courses, which are 6 credits each:
 - Seminar 603 (XMBA 603) Marketing and Entrepreneurship
 - Seminar 604 (XMBA 604) Technology and Operations Management
 - Seminar 606 (XMBA 606) International Business, Trade and Business Law

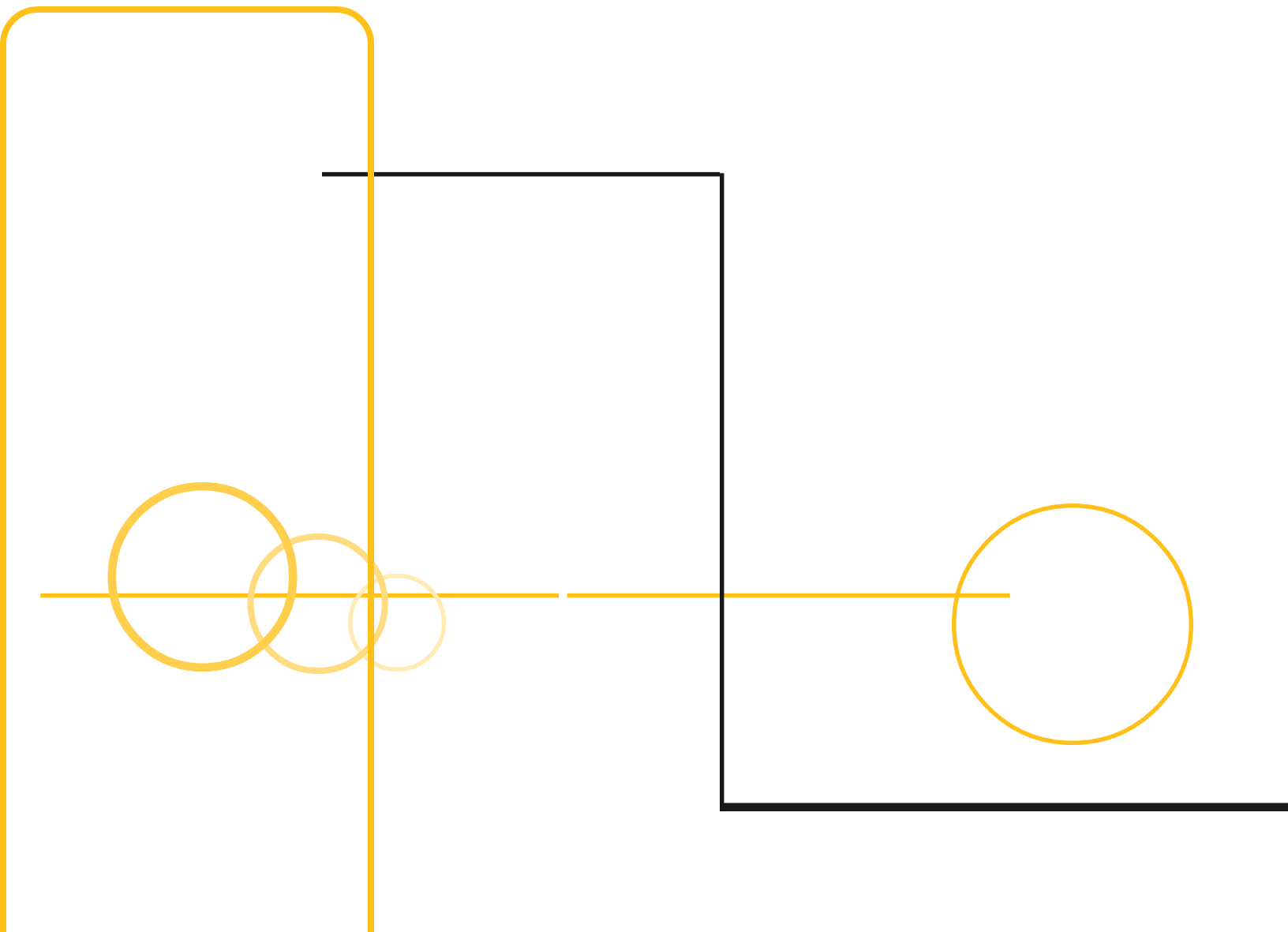
Core Courses and Fees

Course descriptions and fees for all Executive MBA seminars are on w 94.

Locations

Classes in the Executive MBA program are delivered through a combination of face-to-face Saturday seminars and online study. The Saturday seminars are offered at College Park and other locations in the Washington, D.C. area, including the Shady Grove center. Up-to-date schedules and course locations can be found at the following Web sites: <http://www.umuc.edu/prog/gsm/gsmthome.html> or <http://info.umuc.edu/executiveprograms>.

Certificate Programs



Certificate Programs

Starting fall 2000, UMUC will offer more than 30 graduate certificate programs in these fields: the Executive Program, Distance Education, Electronic Commerce, General Management, International Management, Information Technology Systems, and Technology and Environmental Management. Each certificate will range from 12 to 24 credits. The certificates are the ideal credential for individuals who do not wish to pursue a full master's degree or for those who already have one or more advanced degrees and wish to add to their credentials in their field. All of the courses in each certificate program earn full graduate credits that can be applied toward the master's degree. Students have 3 years to complete any certificate which is 18 credits or less and 5 years to complete any certificate above 18 credits.

Program Directors

Salvatore J. Monaco, *Executive Director, Office of Executive Programs*
smonaco@umuc.edu

Helen Carapetian, *Administrative Assistant*
hcarapetian@umuc.edu
Phone: 301-985-7069

Mary Ann Spilman, *Director, Executive Management Programs*
mspilman@umuc.edu

Stephen V. Versace, *Director, Executive Technology Programs*
sversace@umuc.edu

Coordinator

Jane Goldberg, *Coordinator*
jgoldberg@umuc.edu

Admission Requirements

Admission requirements for certificate students are the same as those for degree-seeking students. Specific admission requirements for areas of specialization may be found under the relevant degree program. It is strongly recommended that certificate students seek the advice of the appropriate program advisor before registering to help ensure readiness for selected courses.

Required Library Research Skills Course

To ensure students are well prepared to take advantage of modern library and information resources, the Graduate School has developed a 100-percent online, noncredit library research course. As of fall 1998, all graduate students must successfully complete UCSP 610 or UCSP 610E Library Skills for the Information Age within their first 6 credits of study.

Executive Program

The Executive Programs offer a combination of online and face-to-face 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 GS/GM 14, GS/GM 15, or private-sector equivalents, will receive both a federal government and UMUC CIO Certificate. In addition, credits earned in this program may be applied toward a master's degree. The CIO Certificate program encompasses all competencies cited in the Information Technology Management and Reform Act (Clinger-Cohen) and identified by the federal CIO Council. These are all areas of management associated with the design, development, acquisition, implementation, planning, and maintenance of an organization's information technology structure. XCIO 691 and XCIO 692 are 9 credits and XCIO 693 is 6 credits.

- XCIO 691 Structure and Strategy
- XCIO 692 Systems and Operations
- XCIO 693 CIO Processes

This program is designed for:

- Chief Information Officers and Chief Technology Officers

- Senior Information Technology staff members and planners
- Consultants in the field of information technology

International Business 15 credits

The 8-month International Business Certificate is a program designed to prepare mid- to senior-level managers for the challenges of global competition. Courses are delivered through a combination of face-to-face seminars and online study, plus a one-week international trip. Throughout the program, emphasis is placed on teamwork and executive-style presentations. Credits earned in this program may be applied toward a UMUC master's degree. Participants are instructed in strategic issues of international management, including theories of competition and competitive strategy, and methodologies of strategy planning and analysis relevant to the major national and regional business environments. Organizational and functional issues are introduced, including transnational company structures, the role of marketing, finance, trade, technology innovation, and the public-private interface in the formula-

tion of firm strategy. The program culminates with a strategy project in which participants are teamed with sponsoring corporations to develop market entry or market enhancement strategies designed to improve the sponsoring firm's competitive advantage. XMAN 601 is 3 credits and XMBA 606 and XMBA 607 are 6 credits each.

- XMAN 601 Managing in a Competitive International Environment
- XMBA 606 International Business, Trade, and Environment
- XMBA 607 Strategy and Sponsored Project

This program is designed for:

- CEOs, general managers, and directors interested in developing or expanding their international markets
- Strategic planners and mid- to senior-level managers involved in identifying international market opportunities for their firms
- Marketing and product development professionals concerned about developing highly competitive products in global markets.

Strategic Management of Technology & 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. The seminar develops the principles, implications, and role of technology innovation in organizational development and global competition. It builds skills in corporate creativity and innovation, technology planning, capital finance and budgeting, marketing, and strategic management. Important, cutting-edge management techniques for business leaders are covered including activity-based costing, e-commerce, knowledge management, flexible product development, and the balanced scorecard. The certificate is designed for managers in both private and public sector organizations who wish to acquire the necessary skills and business

expertise to identify ways to strategically improve their organizations' performance and global competitiveness. All 12 credits in this certificate may be applied toward the degree of Master of Science in Technology Management.

- XCSM 691 Strategic Management of Technology and Innovation

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.

Distance Education Program

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

Distance Education & Technology 12 credits

The Certificate in Distance Education (Technology) is intended for people seeking to exercise some managerial responsibility over the distance education technology-based functions in their organizations. It is particularly helpful for people who already have an advanced degree, but who need to be updated and/or introduced to the field. The certificate is intended to place the study of contemporary educational technologies in the context of the goals of educational and

training organizations and to provide the students with some in-depth knowledge and experience with the primary distance technologies in use today.

- OMDE 601 Foundations of Distance Education
- OMDE 603 Technology in Distance Education

Two of the following:

- OMDE 605 New and Emerging Media in Distance Education
- OMDE 623 Web-Based Learning and Teaching and the Virtual University
- OMDE 631 Advanced Technology in Distance Education 1—Synchronous Systems
- OMDE 632 Advanced Technology in Distance Education 2—Asynchronous Systems
- OMDE 633 Information Technology and Distance Education

Foundations of Distance Education 12 credits

The Certificate in Distance Education (Foundations) is intended for people seeking to exercise some managerial responsibility over the distance education functions in their organizations. It is particularly helpful for people who already have an advanced degree, but who need to be updated and/or introduced to the field. The certificate is intended to represent the study of the four basic foundational aspects of the field of distance education: history and theory, media and technology, economics, and support of the student.

- OMDE 601 Foundations of Distance Education
- OMDE 605 New and Emerging Media in Distance Education
- OMDE 606 Economics of Distance Education
- OMDE 624 Student Support in Distance Education

Library Services in Distance Education 12 credits

The Certificate in Distance Education (Library Services) is intended for people seeking to exercise some managerial responsibility over the delivery of distance education library services functions in their organizations. It is particularly helpful for people who already have an advanced degree, but need to be updated and/or introduced to the field. The certificate will provide in-depth information in the history, theory, and organization structure of distance education, and the role of library services within those organizations. Emphasis will be placed on the selection and application of appropriate technologies, particularly with reference to library services.

- OMDE 601 Foundations of Distance Education
- OMDE 603 Technology in Distance Education
- OMDE 611 Issues in the Delivery of Library Services to Distance Students

One elective from the Master of Distance Education program

Teaching at a Distance 12 credits

The Certificate in Distance Education (Teaching at a Distance) is intended for people seeking to teach via distance in their organizations. It is particularly helpful for people who already have an advanced degree, but who need to be updated and/or develop skills related to distance teaching. The certificate is intended to provide the student with teaching and learning concepts and teaching skills and methods that are appropriate to a distance education and training context.

- OMDE 601 Foundations of Distance Education
- OMDE 603 Technology in Distance Education
- OMDE 607 Instructional Design and Course Development in Distance Education
- OMDE 623 Web-Based Learning & Teaching and the Virtual University

Training at a Distance 12 credits

The Certificate in Distance Education (Training) is intended for people seeking to exercise some managerial responsibility over the distance training functions in their organizations. It is particularly helpful for people who already have an advanced degree but who need to be updated and/or introduced to the field. The certificate is intended to provide the student with a broad range of knowledge about and skills in the application of distance education and training within business, industry, government, and nonprofit organizations.

- OMDE 601 Foundations of Distance Education
- OMDE 621 Training at a Distance
- OMDE 622 The Business of Distance Education

One elective from the Master of Distance Education Program.

E-Commerce

Electronic Commerce 15 credits

The Certificate in Electronic Commerce introduces participants to the critical competencies and skills needed to effectively identify, develop, and implement e-commerce business strategies in various types of organizations.

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

General Management Program

Accounting 12 credits

The Certificate in Accounting is designed to broaden and deepen the accounting knowledge of practicing professionals. As accountants become cost consultants and systems design partners in an information-technology- and e-commerce-based environment, participants will be prepared

to respond to the changing role of accountants in modern organizations.

- ACCT 609 E-Commerce for Accountants
- ACCT 610 Financial Accounting
- ACCT 611 Management Accounting
- ACCT 614 Accounting Information Systems

Financial Management in Organizations 15 credits

The Certificate in Financial Management in Organizations is intended for people seeking to exercise managerial responsibilities over the financial functions of their organizations. It is also helpful to general managers who wish to strengthen their knowledge of and skills in the financial management of their organizations.

- ADMN 631 Financial Management in Organizations
- ADMN 632 Financial Management of Current Operations
- ADMN 633 Long-Term Financing of Organizations
- ADMN 634 Financial Markets and Investments
- ADMN 639 Multinational Financial Management
- ADMN 655 Strategic Financial Management

Note: The courses for this certificate program are sequenced. Students should take the courses in the following order:

- ADMN 631
- ADMN 634

Select two courses from the following: ADMN 632, ADMN 633, ADMN 639

- Fifth and final class: ADMN 655

Foundations for Health Care Administration 12 credits

The Certificate in Foundations for Health Care Administration represents basic management subject matter (communication and financial management), as well as the two most fundamental health care administration track courses.

- ADMN 625 Organizational Communication and Group Development
- ADMN 630 Financial Decision Making for Managers
- ADMN 670 The Health Care System
- ADMN 673 Legal Aspects of Health Care Administration

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 re-source management (HRM) function. It reviews fundamental principles of organizational behavior, the scope of human re-source management issues, and basic legal frameworks involved in managing people. Line managers, as well as those interested in pursuing a career in HRM, will find the information practical.

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

Governance, Resource, and Volunteer Management 12 credits

The Certificate in Governance, Resource, and Volunteer Management provides nonprofit professionals with the history and practice of nonprofit. Special attention is paid to human resource management as well as the management of volunteers and tangible and intangible assets.

- ADMN 656 Not-for-Profit Organization Issues and Management
- ADMN 657 Management of Critical Resources in Not-for-Profit Organizations
- ADMN 662 Issues and Practices in Human Resource Management

- ADMN 659 Strategic Management in Not-for-Profit Organizations

Health Care Administration 18 credits

The Certificate in Health Care Administration is geared toward those professionals who want a specialization in health care administration but who do not desire a full MSM degree. The six courses selected by the certificate student represent the full spectrum of updated health care administration.

- ADMN 670 The Health Care System
- ADMN 671 Public Health Administration
- ADMN 672 Financial Management for Health Care Organizations
- ADMN 673 Legal Aspects of Health Care Administration
- ADMN 674 Health Care Institutional Organization and Management
- ADMN 675 Long Term Care Administration
- ADMN 679 Special Topics in Health Care Administration

Note: Students are required to take ADMN 670, ADMN 673, and ADMN 674. The student can then select any three of the remaining four courses to complete the certificate.

Integrated Direct Marketing 12 credits

The Certificate in Integrated Direct Marketing prepares students to design, develop, test, implement, and measure the deployment of multiple media and sales channels (for example, publicity and public relations, advertising, direct mail, interactive marketing, telemarketing, and field sales).

- ADMN 686 Marketing Management
- ADMN 638 Research Methods for Managers
- ADMN 688 Marketing Intelligence and Research Systems
- ADMN 689 Integrated Direct Marketing

Integrative Supply Chain Management 12 credits

The Certificate in Integrative Supply Chain Management is designed to familiarize participants with in-depth strategies and procedures related to integrative supply chain management. Major topics include aspects of e-commerce, logistics, supply and distribution chains, pricing, negotiations, and statistical manipulation of databases for more efficient procurements.

- ADMN 622 Supply Chain Management
- ADMN 623 Contemporary Logistics
- ADMN 628 Pricing and Negotiations
- ADMN 638 Research Methods for Managers

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.

- ADMN 631 Management in Organizations
- ADMN 633 Long Term Financing of Organizations
- ADMN 654 Not-for-Profit Financial Management
- ADMN 659 Strategic Management in Not-for-Profit Organizations

Principles & Practices of Health Care Administration 12 credits

The Certificate in Principles and Practices of Health Care Administration provides in-depth coverage of managerial and health care administration. It provides a focus on leadership and decision making, and health care management principles, and allows the student to select between two courses for specialization.

- ADMN 635 Organizational Leadership and Decision Making

- ADMN 672 Financial Management for Health Care Organizations
- ADMN 674 Health Care Institutional Organization and Management

and

- ADMN 671 Public Health Administration

or

- ADMN 675 Long-Term-Care Administration

(Note: ADMN 630 Financial Decision Making for Managers is a prerequisite for ADMN 672.)

Procurement & Contract Management 15 credits

The Certificate in Procurement and Contract Management is designed to familiarize participants with the broad concepts and strategies of procurement and contract management. The course of study includes the following major topics: foundations of pricing and negotiations, basic aspects of contracting, procurement of services and products, aspects of commercial transactions, logistics, and materials management.

- ADMN 626 Purchasing and Materials Management
- ADMN 627 Legal Aspects of Contracting
- ADMN 628 Contract Pricing and Negotiation
- ADMN 629 Strategic Purchasing and Logistics
- ADMN 660 Commercial Transactions in a Technological Environment: Law, Management & Technology

Systems Analysis 12 credits

In the development of an information system, early attention must be given to tasks such as problem definition, systems analysis, requirements definition, and logical design. The Certificate in Systems Analysis is designed to prepare students to undertake these early tasks. In addition to providing a

technical foundation, the certificate program provides education on managerial uses of information systems, the software development life cycle, and systems analysis and design.

- ADMN 640 Information Systems for Managers

Or any CSMN/TLMN course

- ADMN 641 Information Systems Management and Integration
- ADMN 643 Systems Analysis and Software Engineering
- ADMN 644 Expert Systems and Decision Support Systems

Information Technology Systems Programs

The following six certificates provide the technical and quasi-technical foundations for knowledge workers in the fields of software development management, database systems and security, information resources management, applied computer systems, software engineering, and telecommunications.

(Note: Federal workers participating in the 1000 By the Year 2000 Program and its successor must take a total of six courses [18 credits] by adding one additional elective to the certificates listed in this section.)

Applied Computer Systems 15 credits

The Certificate in Applied Computer Systems is intended for information technology (IT) professionals who desire a background in the underlying computer hardware, operating systems, and languages that are the building blocks of information systems. This is 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 CSMN degree.

- CSMN 601 Issues, Trends, and Strategies for Computer Systems Management

Three of the following:

- CSMN 615 Hardware and Operating Systems
- CSMN 616 Distributed Computing
- CSMN 617 Principles of Programming Languages
- CSMN 618 Knowledge-Based Systems

One elective from CSMN, TLMN, or TMAN

Database Systems & Security 15 credits

The Certificate in Database Systems & Security 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 system (DBMS), and acquiring a grounding in current computer topics and information security. All courses apply to the CSMN degree.

- CSMN 601 Issues, Trends, and Strategies for Computer Systems Management

Three of the following:

- CSMN 655 Information Risk Assessment and Security Management
- CSMN 656 Database Processing and Design
- CSMN 657 Advanced Database Applications
- CSMN 658 Software Reliability and Reusability

One elective from CSMN, TLMN, or TMAN

Information Resources Management 15 credits

The Certificate in Information Resources Management represents the most general certificate in the Information Technology Systems area. Course content includes exposure to the most common challenges faced by the IT generalist in the public or private sector. This certificate is particularly desirable for persons with limited formal study or little work experience in the IT field. All courses apply to the CSMN degree.

- CSMN 601 Issues, Trends, and Strategies for Computer Systems Management
- CSMN 635 Systems Development and Project Control
- CSMN 636 Telecommunications and Connectivity
- CSMN 637 Acquisition of Information Technology

One elective from CSMN, TLMN, or TMAN

Information Technology 15 credits

The Certificate in Information Technology is intended for those students interested in a technical curriculum that covers a broad range of information technology topics.

The certificate addresses computer science, telecommunication, and engineering principals. Students entering this certificate program must meet all the requirements for admission to the Master of Science in Information Technology. All courses apply to the MSIT degree.

- MSIT 610 Foundations of Information Technology

Four of the following:

- MSIT 620 Computer Concepts
- MSIT 630 Concepts in Software-Intensive Systems
- MSIT 640 Data Communications and Networks
- MSIT 650 Systems Engineering
- MSIT 660 Internet Principals and Applications

Software Development Management 15 credits

The Certificate in Software Development Management provides technical managers and computer professionals with the technical foundations and management insights needed to participate in and manage phases of the software/systems life cycle. The emphasis is not on learning to write software programs, but on managing the process of software development.

Familiarity with a high-level programming language is desirable. All courses apply to the CSMN degree.

- CSMN 601 Issues, Trends, and Strategies for Computer Systems Management

Three of the following:

- MSWE 635 Software System Development
- MSWE 645 System and Software Standards and Requirements
- MSWE 646 Software Design and Implementation
- MSWE 647 Software Verification and Validation
- MSWE 648 Software Maintenance

One elective from CSMN, TLMN, or TMAN

Software Engineering 15 credits

The Certificate in Software Engineering is intended for those students interested in the foundation and issues of software engineering. The certificate addresses software development and design issues. Students entering this certificate must meet all of the requirements for admission to the Master of Science in Software Engineering. All courses apply to the MSWE degree.

- MSWE 601 Issues in Software Engineering

Three of the following:

- MSWE 645 Systems and Software Standards and Requirements
- MSWE 646 Software Design and Implementation
- MSWE 647 Software Verification and Validation
- MSWE 648 Software Maintenance

One elective from the MSWE program

Telecommunications Management 15 credits

The Certificate in Telecommunications Management gives the technical manager of IT professionals the technical and management skills needed to plan, acquire, operate, evaluate, and upgrade telecommunication systems in an environment of IT convergence and constant change. One semester of

undergraduate calculus and one semester of statistics are prerequisite for this certificate. All courses apply to the TLMN degree.

- TLMN 602 Telecommunications Industry: Structure and Environment
- TLMN 641 Network Management and Design
- TLMN 650 Hardware and Software Acquisition
- TLMN 655 Systems Integration for Telecommunications Managers

One of the following:

- TLMN 610 Data-Communications Systems
- TLMN 620 Local Area Networking Systems
- TLMN 625 Wide Area Networking Systems
- TLMN 630 Satellite Communications System
- TLMN 636 Internet Principals and Applications
- TLMN 645 Wireless Telecommunications Systems

International Management Programs

Doing Business in the United States 12 credits

The Certificate in Doing Business in the United States (U.S.) is intended to acquaint business people from outside the U.S. with American business practices. Furthermore, students learn how to deal with marketing product obstacles within the U.S. market. Subjects such as U.S. importing procedures, finding distributors and strategic alliance partners, marketing goods and services within the U.S., and the U.S. legal system are explained and applied. The program also includes a one-week trip to the U.S. during which participants will visit businesses and government agencies. Those without a marketing background should take ADMN 685 as their first course. It is recommended that IMAN 660 be taken as the last course.

- ADMN 637 Legal Aspects of Management
- IMAN 660 Business Strategies for the United States

Two of the following:

- ADMN 661 Employee Relations
- ADMN 685 Strategic Market Planning
- ADMN 687 Market Segmentation and Penetration
- IMAN 620 International Marketing Research and Analysis
- IMAN 625 International Trade and Trade Policy

International Marketing 12 credits

The Certificate in International Marketing explores the marketing issues that are encountered when entering foreign markets such as cultural differences, market access barriers, market research, and market entry strategies. The first course taken should be IMAN 640 and the remaining courses may be taken in any order. The certificate is intended for U.S. company managers who seek to market goods and services outside the United States.

- IMAN 625 International Trade & Policy
- IMAN 620 International Marketing Research & Analysis
- IMAN 640 International Marketing Management

One of the following:

- IMAN 661 Area Studies: Business Strategies for Europe
- ADMN 687 Market Segmentation & Penetration
- ADMN 689 Integrated Direct Marketing

International Trade 12 credits

The Certificate in International Trade prepares managers to identify and take advantage of global business opportunities. Topics such as global business strategies, strategic alliances, the World Trade Organization, and government relations are explored and applied to business situations. The first course taken should be IMAN 601 followed by IMAN 615. The remaining courses may be taken in any order. The certificate is intended for managers who want to learn the principles and techniques of international business and how to apply them to real business situations.

- IMAN 601 Strategic Management in a Global Environment
- IMAN 615 Foreign Investment and Strategic Alliances
- IMAN 625 International Trade & Policy

One of the following:

- IMAN 635 The Public Sector in International Commerce
- IMAN 640 International Marketing Management
- IMAN 645 The International Legal and Tax Environment

Technology and Environmental Management Program

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.

- BTMN 640 Social and Ethical Issues
- BTMN 641 Commercialization of Biotechnology
- BTMN 643 The Techniques of Biotechnology
- BTMN 644 The Regulatory Environment of Biotechnology
- BTMN 646 Bioinformatics

Environmental

Management 15 credits

The Certificate in Environmental Management is intended for people seeking to improve their abilities in managing environmental projects and programs. It is particularly helpful to relatively new environmental managers who wish to strengthen skills in working with a diverse group of environmental professionals.

- ENVM 646 Environmental Law and Policy Development
- ENVM 643 Environmental Communication and Reporting
- ENVM 647 Environmental Risk Assessment
- ENVM 644 New Technologies in Environmental Management
- ENVM 641 Environmental Auditing

Technology Systems

Management 18 credits

The Certificate in Technology Management is available for students who are interested in the management of technology systems, but are not interested in pursuing the full degree program. The design, development, or acquisition of modern complex systems requires skills and background in both technical and management topics. The certificate program provides the basic systems management approach. The certificate program requires the following six core courses:

- TMAN 611 Principles of Technology Management
- TMAN 612 Financial Management for Technology Managers
- TMAN 614 Strategic Management of Technology and Innovation
- TMAN 621 Systems Analysis and Operations Research
- TMAN 622 Systems Development, Acquisition, and Management
- TMAN 632 Organizational Performance Management

Noncredit Courses



General Information

The Graduate School offers a complement of online noncredit courses designed to provide students with the skills and knowledge they need to complete their academic programs successfully.

Although these courses carry no UMUC credits, they will appear on UMUC students' official academic transcripts. At the conclusion of the course, a grade of "P" (Pass) will be posted.

Note: Non-UMUC participants will not receive a grade for noncredit courses. Financial aid, the Golden ID program, and USM remission of fees may not be applied to noncredit courses.

Current information about the Graduate School's noncredit courses is available at www.umuc.edu/gsmnt/noncred.html.

Noncredit Registration Instructions

UMUC graduate students must be admitted or have an application on file before registering for noncredit courses. UMUC offers five ways to register: by phone through IRIS, by mail, by fax, online, or in person. For help with the registration process, students should contact the office of Graduate Services via e-mail at gradinfo@umuc.edu or 301-985-7155.

Non-UMUC participants may register for noncredit courses by completing and submitting a Non-UMUC Participant Noncredit Course Registration Form with payment. The form is available at <https://www.umuc.edu/prog/gsmnt/nonreg.html>. A hard copy of the form may be requested by sending an e-mail to gradschool@info.umuc.edu or by calling 301-985-4617.

Note: No refunds will be given to non-UMUC participants after the official start date of class.

Course Descriptions and Tuition Information

USCP 600

Graduate Writing Seminar

This course provides individual and conferencing instruction in work and course-related writing. With the faculty member, students identify areas of strength and weakness and develop specific writing objectives and a plan for improvement, including a week-to-week timeline for completion. The course module design enables students to work with the faculty member to review basic concepts, principles, and tools of writing. Weekly writing assignments and conference discussion participation are required. This course serves as a refresher on writing skills as well as a basic foundation for those needing more extensive help. Among the module topics are grammar, structural and transitional techniques, audience analysis, levels of detail, treatment and integration of references from scholarly literature, interaction of the verbal and visual presentation, collaborative writing and analysis, problem solving, synthesis, and assessment in diverse genres of business and academic writing.

Note: This course is not intended to be an ESL course.

Course Length: 10 weeks

UMUC Graduate Student Tuition: \$225

Non-UMUC Participant Tuition: \$275

Continuing Education Units (CEUs): 3 (awarded upon course completion)

USCP 610

Library Skills for the Information Age

This course is designed to familiarize students with electronic library and information resources. The significant changes in how information is delivered and the advent of the World Wide Web make information retrieval and research an exciting challenge. This course provides an in-depth introduction to the library research process and the tools necessary to be effective in the Graduate School. Students learn to efficiently and effectively use a variety of electronic retrieval systems

including VICTORWeb (the online catalog of the University System of Maryland), the Web, LEXIS/ NEXIS, and Dialog.

Note: This course is required for all new graduate students as of fall 1998 and all inactive students who reapply for admission. It must be completed within the first 6 credits of graduate study.

This online course is a self-paced tutorial and can be completed on the student's own schedule anytime before its end date (it is not a 15-week class). It consists of seven modules with exercises and quizzes. The purpose of the course is to alert students to the many resources, databases, and research opportunities that are now available online to the student of management. The Graduate School and the Office of Information and Library Services are proud to offer this material, which is critical for 21st century managers.

Course Length: Self-paced tutorial, ongoing registration

Course Dates:

Spring: January 1 through May 31

Summer: June 1 through August 25

Fall: August 26 through December 31

UMUC Graduate Student Tuition: \$75 (This fee is for program administration and technological support.)

Non-UMUC Participant Tuition: USCP 610 is not available to non-UMUC participants.

Continuing Education Units (CEUs): None

USCP 620

Financial Accounting

Financial accounting is an information system built upon a set of fundamental concepts. Its primary purpose is to help both current and potential investors value a company's debt and equity securities, that is, its bonds and common stock. This course is designed for people with no prior coursework in financial accounting. It encompasses basic financial concepts and their use in analyzing financial statements. Students analyze financial statements of actual companies and explore the process by which accounting principles are developed.

Students develop a fundamental appreciation for how financial accounting information can be used to evaluate the economic performance of companies.

Note: Students without a background in accounting and finance are strongly advised to complete this course before enrolling in ADMN 630 or ADMN 631.

Course Length: 8 weeks

UMUC Graduate Student Tuition: \$225

Non-UMUC Participant Tuition: \$275

Continuing Education Units (CEUs): 3 (awarded upon course completion)

USCP 621

Economics

This course covers both the microeconomic issues of supply and demand for individual companies and products and macroeconomic issues concerning inflation, unemployment, and recession for the economy as a whole. Basic economic concepts such as opportunity cost, comparative advantage, economic

efficiency, and the time value of money are explored in the context of business, government, and personal situations.

Note: Students without a background in accounting and finance are strongly advised to complete this course before enrolling in ADMN 630 or ADMN 631.

Course Length: 8 weeks

UMUC Graduate Student Tuition: \$225

Non-UMUC Participant Tuition: \$275

Continuing Education Units (CEUs): 3 (awarded upon course completion)

USCP 630

Introduction to Research Methods

This course presents basic research techniques and methodologies used in organizational research and evaluation studies. The information from these studies is used in making business decisions. Emphasis is also placed on preparing the student to evaluate and use research-based information developed by other individuals. The focus of

the course is on applying basic research techniques to assess the performance of individuals, work groups, and organizations. Areas of coverage include principles of good data collection, presentation of data in tables and charts, summary and description of numerical data, basic probability and discrete estimation, the fundamentals of hypothesis testing, and the use of existing research-based materials to solve business problems. USCP 630 provides students with basic approaches and beginning skills necessary to evaluate research materials and their use in business decision making.

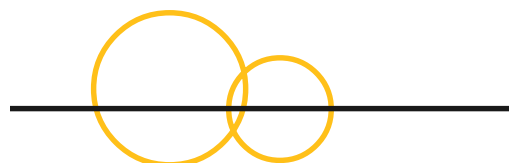
Note: Students without a background in statistics are strongly advised to complete this course before enrolling in ADMN 638.

Course Length: 8 weeks

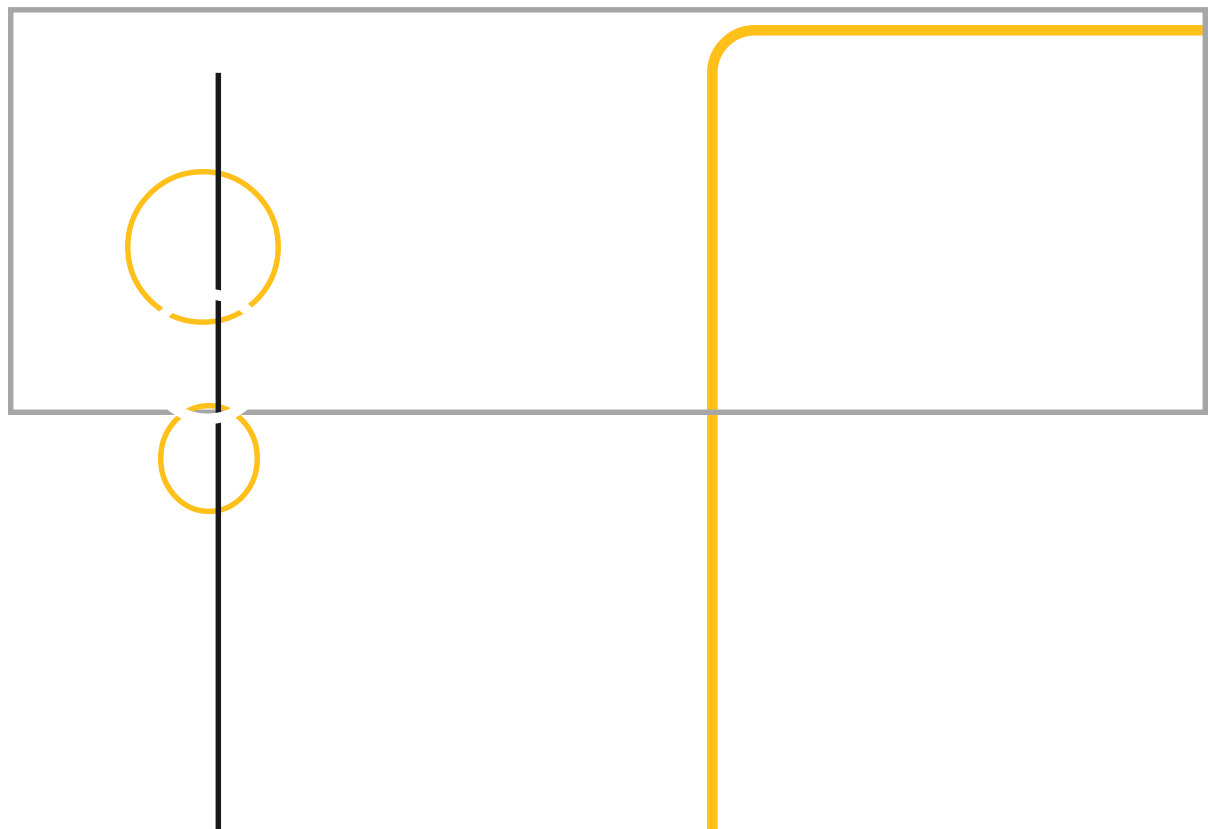
UMUC Graduate Student Tuition: \$225

Non-UMUC Participant Tuition: \$275

Continuing Education Units (CEUs): 3 (awarded upon course completion)



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Christina A. Hannah
channah@umuc.edu

Associate Dean, Administration

Tana Bishop
tbishop@umuc.edu

Associate Dean, Graduate Services

Pamela A. DeMartino
pdemartino@umuc.edu

Associate Dean, Graduate Outreach

Judith B. Kirkhorn
jkirkhorn@umuc.edu

Associate Dean, Academic Affairs

Richard D. Neidig
rneidig@umuc.edu

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erubin@umuc.edu

Executive Assistant to the Dean

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mparker@umuc.edu

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- Barry Stern, *Senior Environmental Health Advisor, Bureau of Health Professions*
- Joseph C. Stokes, *Senior Vice President and Chief Financial Officer, Life Technologies, Inc.*
- Albert H. Teich, *Director, Science and Policy Programs, American Association for the Advancement of Science*
- Marjorie E. Vincent, MBA, *Partner, Ambulatory Strategies, Inc.*

Graduate Faculty

- ADAMS, KEVIN M., *Adjunct Assistant Professor*
B.S., College of Engineering Rutgers University, 1981
M.S., Massachusetts Institute of Technology, 1986
- AJE, JOHN O., *Chair, Technology Management and Engineering Programs, and Professor*
B.S., Clemson University, 1975
M.S., North Carolina State University, 1980
M.E.A., George Washington University, 1983
D.Sc., George Washington University, 1988
- ALBERTS, HENRY C., *Adjunct Professor*
B.S., Queens College, 1949
M.S., University of Delaware, 1956
Ph.D., City University, London, U.K., 1995
- ALDEN, JAY, *Adjunct Professor*
B.S., Long Island University, 1966
M.S., Hofstra University, 1968
Ph.D., Hofstra University, 1973
- ALI, AMJAD, *Adjunct Assistant Professor*
B.S., University of Engineering and Technology, Pakistan, 1991
M.S., George Washington University, 1996
Ph.D., George Washington University, 2000
- ALLEN, NICHOLAS H., *Senior Vice President for Academic Affairs and Provost, and Professor*
B.S., U.S. Coast Guard Academy, 1963
M.B.A., Oklahoma City University, 1970
M.P.A., George Washington University, 1977
D.P.A., George Washington University, 1986
- ALLEN, TED W., *Adjunct Associate Professor*
B.A., University of North Carolina, 1969
M.S., University of Michigan, 1973
Ph.D., University of Michigan, 1974
M.B.A., University of North Carolina, 1984
- ALTER, HARVEY, *Adjunct Professor*
B.S., Queens College, City University of New York, 1952
M.S., University of Cincinnati, 1954
Ph.D., University of Cincinnati, 1957
- AMUAH, ALEXANDER, *Adjunct Assistant Professor*
B.S., University of Ghana, 1979
M.S., University of Guelph, 1987
Ph.D., University of Illinois, 1991

Administration and Faculty

- ANDERSEN, G. DAVID, *Adjunct Professor*
B.S., Concordia Teachers College, 1964
M.A., Wayne State University, 1971
Ed.D., Wayne State University, 1978
- ANDERSON, ROBERT N., *Adjunct Assistant Professor*
B.S., Brigham Young University, 1990
M.S., Texas A&M University, 1992
Ph.D., Pennsylvania State University, 1996
- ANSARI, ARIEF, *Adjunct Assistant Professor*
B.S., Aligarh Muslim University, 1984
M.S., Southern Illinois University, 1988
Ph.D., Southern Illinois University, 1993
- ARDALAN, ABOL, *Adjunct Professor*
B.S., Naval Postgraduate School, 1966
M.S., Naval Postgraduate School, 1967
Ph.D., George Washington University, 1993
- AWWAD, AHMAD A., *Adjunct Assistant Professor*
B.S., Alexandria University, Egypt, 1974
M.S., Ohio University, 1977
M.S., Pennsylvania State University, 1978
M.S., Boston University, 1984
- AZANI, CYRUS H., *Adjunct Associate Professor*
B.S., Shiraz University (Iran), 1973
M.E.A., George Washington University, 1979
D.Sc., George Washington University, 1984
- BAKULI, DAVID, *Adjunct Assistant Professor*
B.A., University of Nairobi, 1983
M.A., University of Nairobi, 1987
Ph.D., University of Massachusetts, 1993
- BARQUIN, RAMON C., *Adjunct Assistant Professor*
B.S., University of Puerto Rico, 1965
B.S.E.E., University of Puerto Rico, 1966
M.S., University of Puerto Rico, 1969
M.E., Massachusetts Institute of Technology, 1972
Ph.D., Massachusetts Institute of Technology, 1974
- BARRETT, GLENDA J., *Program Director, Human Resource Management, and Professor*
B.A., Indiana University, 1973
M.A., University of Iowa, 1977
M.A., George Washington University, 1992
Ph.D., George Washington University, 1993
- BARRY, TIMOTHY M., *Adjunct Assistant Professor*
B.S., University of Pittsburgh, 1971
Sc.D., University of Pittsburgh, 1974
- BARTOO, DIANE, *Program Director, Health Care Administration, and Associate Professor*
B.S., University of Florida, 1969
M.S., University of Maryland, Baltimore, 1975
M.A., University of Southern Mississippi, 1984
Ph.D., University of Southern Mississippi, 1985
- BATTAGLIA, PAUL, *Adjunct Associate Professor*
B.S., Canisius College, 1968
M.S., Butler University, 1974
D.B.A., Nova Southeastern University, 1994
- BEAUCHAMP, ROBERT G., *Program Director, Environmental and Waste Management, and Associate Professor*
B.A., George Washington University, 1966
M.S., George Washington University, 1969
Ph.D., University of Maryland, College Park, 1988
- BECHTOL, DENNIS L., *Adjunct Assistant Professor*
Ph.D., The University of New Mexico, 1994
- BEREZDIVAN, ROBERT, *Adjunct Associate Professor*
B.S., University of Florida, 1965
M.S., University of Florida, 1966
Ph.D., University of California, Berkeley, 1972
- BERKOWITZ, JOAN, *Adjunct Associate Professor*
B.A., Swarthmore College, 1952
Ph.D., University of Illinois, 1955
- BETZ, FREDERICK, *Program Director, Technology & Engineering Programs, Associate Professor*
B.S., University of Chicago, 1958
Ph.D., University of California, Berkeley, 1965
- BLANK, MURRAY D., *Adjunct Associate Professor*
B.S., United States Naval Academy, 1958
M.S., George Washington University, 1970
M.B.A., Loyola College in Maryland, 1985
Ed.D., George Washington University, 1995
- BOISSEAU, H. JAMES, *Adjunct Professor*
B.S., Tulane University, 1953
M.A., Tulane University, 1960
Ph.D., Purdue University, 1967
- BOLESTA, MONICA SAVA, *Adjunct Assistant Professor*
B.S., Fordham University, 1989
M.A., University of Maryland, College Park, 1993
Ph.D., University of Maryland, College Park, 1998
- BOON, JOHN EDWARD, *Adjunct Associate Professor*
B.A., Virginia Wesleyan College, 1980
M.S., George Washington University, 1984
- BORCHINI, EZIO, *Adjunct Assistant Professor*
B.S., University of Maryland, College Park, 1980
M.S., Marymount University, 1992
J.D., Catholic University of America, 1997
L.L.M., George Washington University, 1998
- BORMAN, T. REED, *Adjunct Associate Professor*
B.S., University of Nebraska, 1971
M.A., University of Nebraska, 1972
M.S., University of Alabama, 1982
Ph.D., University of Alabama, 1984
- BOSIN, MORRIS R., *Adjunct Professor*
B.S., American University, 1964
M.A., American University, 1965
Ph.D., George Washington University, 1984
- BOUTERIE, LARRY, *Adjunct Assistant Professor*
B.S., Loyola University of the South, 1974
M.S., University of Southern California, 1980
- BOYSON, SANDOR L., *Adjunct Associate Professor*
B.A., Antioch University, 1981
M.A., University of Sussex (United Kingdom), 1985
Ph.D., University of Sussex (United Kingdom), 1990
- BRANDES, FREDERIC M., *Adjunct Assistant Professor*
A.B., Hunter College, 1970
J.D., University of Baltimore School of Law, 1977
L.L.M., Georgetown University Law Center, 1986
- BROGLIO, CARLO J., *Adjunct Professor*
B.S.E.E., University of Detroit, 1966
M.S., University of Maryland, College Park, 1969
Ph.D., University of Maryland, College Park, 1973
- BUNDENS, ROBERT W., *Adjunct Associate Professor*
B.A., George Washington University, 1977
M.A., Michigan State University, 1980
M.L.I.R., Michigan State University, 1981
Ed.D., University of Tulsa, 1985
- BURGESS, WILLIAM, *Adjunct Assistant Professor*
B.S., Frostburg State University, 1984
M.A., University of South Dakota, 1992
J.D., University of Baltimore, 1993
- CANTOR, EUGENE H., *Adjunct Professor*
B.S., University of Maryland, College Park, 1972
J.D., Emory University, 1976
LL.M., Georgetown University, 1980
- CAPIO, RALPH, *Adjunct Associate Professor*
B.A., Rutgers University, 1965
J.D., Union University Albany Law School, 1973
M.P.A., State University of New York, 1974
J.D., George Washington University, 1986
M.I.B., Saint Louis University, 1997
- CAPLAN, BENNETT A., *Adjunct Assistant Professor*
B.A., Columbia University, 1979
J.D., Boston College, 1984
M.A., Fletcher School of Law and Diplomacy, Tufts University, 1985
- CARSWELL, ALAN D., *Program Director, Management Information Systems, and Assistant Professor*
B.S., Northwestern University, 1977
M.B.A., Harvard University, 1982
- CATHEY, CHERYL, *Adjunct Associate Professor*
B.S., University of Colorado, Boulder, 1984
M.S., Stanford University, 1985
Ph.D., Stanford University, 1989
- CHAMOT, DENNIS, *Adjunct Assistant Professor*
B.S., Polytechnic Institute of Brooklyn, 1964
M.S., Polytechnic Institute of Brooklyn, 1964
Ph.D., University of Illinois, 1969
M.B.A., University of Pennsylvania Wharton School of Business, 1974

Administration and Faculty

- CHAN, PAUL H., *Adjunct Associate Professor*
M.S., Johns Hopkins University, 1990
M.B.A., Wharton School, University of Pennsylvania, 1998
Ph.D., University of Missouri, 1980
- CHASEN, STEVEN PAUL, *Adjunct Assistant Professor*
B.S., Towson State University, 1976
Ed.D., University of Maryland, College Park, 1989
- CHAUDHURI, SAM (SYAMA), *Professor of Practice and Associate Professor*
B.A., University of Evansville, 1956
B.S., University of Calcutta, 1961
M.S., University of Florida, 1963
Ph.D., University of Florida, 1967
- CHEN, JIM QIMING, *Adjunct Assistant Professor*
B.A., Fudan University (China), 1982
M.A., Fudan University (China), 1985
Ph.D., University of Maryland, College Park, 1996
- CHI, DONALD N. H., *Adjunct Associate Professor*
M.S., Carnegie Mellon University, 1965
Ph.D., University of Pittsburgh, 1970
- CLAUSER, STEVEN B., *Adjunct Professor*
B.A., Oakland University, 1976
M.P.A., University of Minneapolis, 1979
Ph.D., University of Minneapolis, 1984
- CLAVADETSCHER, CARL, *Adjunct Professor*
B.S., Montana State University, 1965
M.S., S. Illinois University, 1966
M.S., University of Oregon, 1968
Ph.D., University of Oregon, 1973
M.B.A., University of Puget Sound, 1978
M.S.M.I.S., Claremont Graduate School, 1987
- COHEN, DAVID J., *Program Director, Telecommunication Studies, and Professor*
B.S., Carnegie Mellon University, 1966
M.S., Pennsylvania State University, 1969
Ph.D., Pennsylvania State University, 1971
- COLWELL, THELMA, *Associate Professor*
B.A., Chatham College, 1975
J.D., Vanderbilt University, 1978
- COMBS, PAUL, *Professor*
B.A., University of Tennessee, 1975
M.S., Virginia Polytechnic Institute and State University, 1980
Ed.D., Virginia Polytechnic Institute and State University, 1985
- COOGLE, JOSEPH M. Jr., *Adjunct Associate Professor*
B.S., University of Kentucky, 1957
M.B.A., University of Chicago, 1958
- COOK, THOMAS M., *Adjunct Professor*
B.S., Chaminade University of Honolulu, 1972
M.Ed., University of Hawaii, 1974
Ph.D., University of California at Irvine, 1983
- COOLEY, HIRAM W., *Adjunct Associate Professor*
B.S., University of Wisconsin–Madison, 1957
M.S., University of Wisconsin–Whitewater, 1970
Ph.D., University of Wisconsin–Madison, 1979
- COOPER, MERRI-ANN, *Adjunct Associate Professor*
B.A., Brooklyn College
M.S., American University
Ph.D., University of Chicago (1974)
- COSENZA, ROBERT M., *Adjunct Professor*
B.S., St. Peters College, 1968
M.B.A., City University of New York, 1970
D.B.A., University of Kentucky, 1980
- COSTA, JOSEPH, *Adjunct Associate Professor*
M.S., University of Southern California, 1973
Ed.D., University of Southern California, 1980
- COTHERN, RICHARD C., *Adjunct Professor*
B.A., Miami University (Ohio), 1959
M.S., Yale University, 1961
Ph.D., University of Manitoba (Canada), 1965
- COY, CURTIS L., *Adjunct Assistant Professor*
B.S., U.S. Naval Academy, 1975
M.S., Naval Postgraduate School, 1986
- DABBAH, ROGER, *Adjunct Associate Professor*
B.A., University of Minnesota, 1961
M.S., University of Minnesota, 1965
Ph.D., University of Maryland, College Park, 1970
M.B.A., University of Dayton, 1976
- DAMPIER, DAVID A., *Adjunct Associate Professor*
B.S., University of Texas at El Paso, 1984
M.S., Naval Postgraduate School, 1990
Ph.D., Naval Postgraduate School, 1994
- DAS, PRASANTA, *Adjunct Associate Professor*
B.S., Burdwan University (India), 1966
M.S., University of Vermont, 1971
Ph.D., Case Western Reserve University, 1976
M.S., Johns Hopkins University, 1984
- DAVIS, RONNIE H., *Adjunct Professor*
B.B.A., Kent State University, 1967
M.A., University of Akron, 1969
M.A., University of Pittsburgh, 1974
Ph.D., University of Pittsburgh, 1975
- DEACON, RONALD W., *Adjunct Associate Professor*
B.E.S., Johns Hopkins University, 1965
M.S., University of Massachusetts, 1967
Ph.D., University of Massachusetts, 1970
- DEBAKEY, GEORGE T., *Adjunct Assistant Professor*
B.S., Drake University, 1972
M.B.A., Southern Methodist University, 1974
- DEBLASIS, SAMUEL J., *Adjunct Associate Professor*
B.S., University of Arizona, 1979
J.D., University of Dayton, 1982
- DEMING, BASIL S., *Adjunct Professor*
B.S., John Carroll University, 1962
M.A., Case Western Reserve University, 1968
Ph.D., Kent State University, 1971
- DENT, ERIC B., *Program Director, Doctor of Management, and Adjunct Professor*
B.S., Emory University, 1983
M.S., Emory University, 1983
M.B.A., George Washington University, 1986
Ph.D., George Washington University, 1997
- DESANTIS, MARK F., *Adjunct Assistant Professor*
B.A., University of Dayton, 1981
M.B.A., University of Dayton, 1983
M.S., American University, 1988
Ph.D., George Mason University, 1993
- DESIMONE, MARC, *Adjunct Associate Professor*
B.A., Morgan State University, 1976
M.A., Saint Mary's Seminary and University, 1980
Ph.D., University of Maryland, College Park, 1994
- DEZEE, MATTHEW R., *Adjunct Associate Professor*
B.A., Syracuse University, 1973
M.S., Florida State University, 1977
Ph.D., Florida State University, 1982
- DIGGS, CAROL, *Adjunct Associate Professor*
B.A., University of Oklahoma, 1970
M.A., George Washington University, 1974
- DIXON, MICHAEL, *Adjunct Associate Professor*
Bachelor of Pharmacy, University of London, 1960
Pharmaceutical Chemist, Royal Pharmaceutical Society of Great Britain, 1961
Ph.D., The City University, London, 1982
- DONATO, KAREN A., *Adjunct Assistant Professor*
B.S.E., University of Pennsylvania, 1981
M.S., Ohio University, 1985
Ph.D., Ohio University, 1987
- DRIVER, MICHAELA, *Adjunct Assistant Professor*
B.S., University of Alabama, 1993
M.A., University of Alabama, 1995
Ph.D., University of Alabama, 1997
- EDWARDS, KATHLEEN F., *Program Director, Health Care Administration, and Associate Professor*
B.S., University of Maryland, College Park, 1967
M.S.N., Catholic University of America, 1971
Ph.D., Catholic University of America, 1981
- EICKELMANN, NANCY, *Adjunct Assistant Professor*
B.S., San Diego State University, 1988
M.B.A., San Diego State University, 1992
M.S., University of California, Irvine, 1994
Ph.D., University of California, Irvine, 1997
- ELEMO, RUFUS, *Adjunct Associate Professor*
B.S., University of Missouri, 1976
M.S., Louisiana State University, 1976
Ph.D., University of Texas at Austin, 1978

Administration and Faculty

ELGIN, MARGARET A., *Adjunct Associate Professor*
B.A., Western Maryland College, 1967
M.A., Washington College, 1972
Ph.D., University of Maryland, College Park, 1982

EVANCHIK, MICHAEL A., *Program Director, General Management/Master of Business Administration, and Associate Professor*
B.S., Rensselaer Polytechnic Institute, 1971
M.S., Rensselaer Polytechnic Institute, 1972
M.S., University of Southern California, 1974
Ph.D., University of Washington, 1989

FANTT-HARRIS, MICHELE A., *Adjunct Assistant Professor*
B.A., University of Maryland, Baltimore County, 1976
M.A.S., Johns Hopkins University, 1979
J.D., University of Baltimore, 1988

FASIG, WILLIAM P., *Adjunct Assistant Professor*
B.A., Wheaton College, 1984
M.A., Georgetown University, 1987

FAUX, ELKANAH E., *Adjunct Associate Professor*
B.S., Fourah Bay College, 1980
M.A., Université de Paris, Sorbonne, 1984
Ph.D., Paris L. Pantheon - Sorbonne, 1987

FEIGENBAUM, DAVID M., *Adjunct Associate Professor*
B.S., Case Western Reserve University, 1960
M.B.A., Case Western Reserve University, 1964
DB.A., Kent State University, 1976

FEKETE, PAUL J., *Adjunct Assistant Professor*
B.A., Bates College, 1978
M.A., Johns Hopkins University, 1982

FIELD, RALPH "TED," *Program Director, Not-for-Profit Management, and Assistant Professor*
B.A., Colby College, 1974
M.A., University of Maine, 1976
Ph.D., Cornell University, 1988

FINKELMAN, ROBERT B., *Adjunct Assistant Professor*
B.S., City College of New York, 1965
M.S., George Washington University, 1970
Ph.D., University of Maryland, College Park, 1980

FINKELSTEIN, ROBERT, *Adjunct Associate Professor*
B.A., Temple University, 1964
M.S., University of Massachusetts, 1966
M.S., George Washington University, 1974
DB.A., George Washington University, 1995

FITZPATRICK, EDMUND W., *Adjunct Professor*
B.A., Hamline University, 1957
M.A., University of Minnesota, 1958
Ph.D., Catholic University of America, 1970

FLANAGAN, PAUL H., *Adjunct Assistant Professor*
A.A., Richard Bland College, 1974
B.S., Virginia Commonwealth University, 1976
M.A., University of Maryland, College Park, 1981

FLEMING, EMMETT L., *Program Director, Procurement and Contract Management, and Professor*
B.S., Virginia State University, 1964
M.S., Virginia State University, 1965
J.D., University of Maryland, Baltimore, 1976
Ph.D., Catholic University of America, 1977

FLYZIK, JAMES J., *Adjunct Professor*
B.S., University of Maryland, College Park, 1975
M.B.A., University of Maryland, College Park, 1982

FORTINO, ANDRES, *Adjunct Professor*
B.E., City University of New York, 1970
M.E., City University of New York, 1973
Ph.D., City University of New York, 1976

FRANK, MICHAEL S., *Chair, General Management Programs, and Professor*
B.A., University of Maryland, College Park, 1968
M.A., University of Maryland, College Park, 1973
Ph.D., University of Maryland, College Park, 1981

FROHNHOEFER, FRANCIS W., *Adjunct Associate Professor*
M.A., University of Pennsylvania, 1965
M.B.A., University of Pennsylvania, 1978

GABI, MARK A., *Adjunct Assistant Professor*
B.S., Arkansas State University, 1985
M.S., Central Missouri State University, 1987
Ed.S., Central Missouri State University, 1989
Ph.D., Wichita State University, 1990

GABRIEL, KENNETH, *Adjunct Assistant Professor*
B.S., University of Illinois, 1977
M.S., University of Illinois, 1979
M.S., University of Illinois, 1981
Ph.D., University of Illinois, 1984

GANGULY, PRADEEP, *Adjunct Associate Professor*
B.A., Delhi University (India), 1966
M.A., Delhi School of Economics (India), 1968
Ph.D., Clemson University, 1980

GAVIN, FRANK, *Adjunct Assistant Professor*
B.A., Seton Hall University, 1962
M.A., Niagara University, 1963
M.P.A., University of Southern California, 1987
D.P.A., University of Southern California, 1988

GAY, BILLY F., *Adjunct Associate Professor*
B.S., Morehouse College, 1962
M.S., American University, 1974
Ph.D., University of Santa Barbara, 1980

GEARING, JOHN K., *Adjunct Associate Professor*
B.F.S., Georgetown University, 1952
J.D., Georgetown University, 1956

GELATT, JAMES P., *Program Director, Interdisciplinary Studies in Management, and Professor*
B.A., St. Lawrence University, 1966
M.A., Colgate University, 1969
Ph.D., University of Southern California, 1979

GEORGIU, GEORGE, *Adjunct Professor*
B.A., Drew University, 1973
M.P.H., George Washington University, 1978
Ph.D., George Washington University, 1979

GERRY, FRANK, *Adjunct Associate Professor*
B.S., Northeastern University, 1971
M.A., University of Iowa, 1973
Ph.D., University of Iowa, 1976

GIBSON, ULRIC, *Adjunct Professor*
B.S., University of Edinburgh (Scotland), 1958
M.S., University of Minnesota, 1962
Ph.D., University of Minnesota, 1970

GIETKA, GERALD A., *Adjunct Assistant Professor*
B.A., Loyola College of Maryland, 1970
M.B.A., Loyola College of Maryland, 1992

GILBERT, DANIEL E., *Adjunct Associate Professor*
Ph.D., University of Maryland, College Park, 1972
M.B.A., Syracuse University, 1986

GLICK, J. LESLIE, *Adjunct Professor*
A.B., Columbia University, 1961
Ph.D., Columbia University, 1964

GLICKSTEIN, IRA S., *Associate Professor*
B.E.E., City College of New York, 1961
M.S., Binghamton University, 1990
Ph.D., Binghamton University, 1996

GOFF, DONALD L., *Program Director, Information and Telecommunications Management, and Associate Professor*
B.A.T., Western Illinois University, 1969
A.M., University of Illinois, 1970
Ph.D., Northwestern University, 1991

GOLDSTEIN, JERRY M., *Adjunct Associate Professor*
B.A., University of Toledo, 1969
M.A.T., State University of New York College at Brockport, 1971
M.A., University of Toledo, 1972
Ph.D., Pennsylvania State University, 1975

GONG, WEN, *Adjunct Assistant Professor*
B.E., Beijing University of Posts & Telecommunications, Beijing, 1988
M.B.A., University of International Business and Economics, Beijing, 1994

GOODALE, BEVERLEY J., *Adjunct Assistant Professor*
B.S., University of Maryland University College, 1986
M.S., University of Maryland University College, 1996

GOODMAN, JEFFREY H., *Adjunct Assistant Professor*
B.S., Massachusetts Institute of Technology, 1970
M.S., Harvard University, 1972

GOODWIN, CATHY, *Adjunct Professor*
A.B., Barnard College, Columbia University
M.A., University of Washington, 1967
M.B.A., University of Pennsylvania, Wharton School

- of Business, 1975
Ph.D., University of California, Berkeley, 1986
- GOODWIN, ROBERT C., *Adjunct Associate Professor*
B.A., Fordham University, 1963
J.D., Georgetown University, 1969
- GORDON, GERALD L., *Adjunct Associate Professor*
B.A., The Citadel, 1972
M.A., George Washington University, 1975
Ph.D., Catholic University of America, 1981
- GOULD, JOHN, *Adjunct Assistant Professor*
B.S., Louisiana State University, 1970
M.A., California State University, 1977
D.A., George Mason University, 1977
- GOYAL, SHIV, *Adjunct Professor*
LL.B., Agra University (India), 1961
M.B.A., University of Maryland, College Park, 1980
Ph.D., University of Maryland, Baltimore, 1993
- GRAY, GEORGE L., *Adjunct Assistant Professor*
M.S., Rensselaer Polytechnic Institute, 1967
M.A., University of Delaware, 1972
Ph.D., University of Delaware, 1978
- GREENE, JAMES, *Adjunct Assistant Professor*
B.S., University of Maryland University College, 1989
M.S., The American University, 1992
J.D., University of Maryland at Baltimore, School of Law, 1998
- GRODSKY, MILTON, *Adjunct Professor*
B.S., University of Wisconsin, 1953
M.A., University of South Dakota, 1954
Ph.D., Emory University, 1963
- GROOMS, THOMAS F., *Adjunct Associate Professor*
B.S., Tennessee Technological University, 1970
J.D., Southland University, 1980
M.B.A., Amber University, 1989
M.S., Amber University, 1991
Ph.D., Berne University, 2000
- HADARY, SHARON, *Adjunct Associate Professor*
B.S., University of Wisconsin, 1962
M.S., Cornell University, 1965
Ph.D., George Washington University, 1975
- HALLION, MARIE E., *Adjunct Professor*
B.A., University of Maryland, College Park, 1963
M.A., University of Maryland, College Park, 1964
Ph.D., University of Maryland, College Park, 1968
- HAMILTON, BRUCE, *Adjunct Associate Professor*
B.S., Massachusetts Institute of Technology, 1974
Ph.D., Massachusetts Institute of Technology, 1974
- HANEBURY, JEAN M., *Adjunct Associate Professor*
B.A., West Chester State University
Ph.D., Georgia State University, 1990
- HANNAH, CHRISTINA, *Dean, Graduate Studies and Associate Vice President Academic Affairs, and Professor*
B.A., Simon Fraser University (Canada), 1970
B.Ed., Queens University (Canada), 1973
M.P.A., Carleton University (Canada), 1978
Ph.D., Carleton University (Canada), 1989
- HAPP, BARBARA, *Adjunct Associate Professor*
B.S.N., George Mason University, 1982
M.S., Georgetown University, 1984
Ph.D., George Mason University, 1993
- HARDING, GEORGE, *Adjunct Associate Professor*
B.S., New England College, 1963
M.B.A., University of Delaware, Newark, 1968
Ed.D., Wilmington College, 1996
- HARDY, STUART B., *Adjunct Assistant Professor*
B.A., Bates College, 1968
M.A., Georgetown University, 1973
Ph.D., Georgetown University, 1974
- HARRIS, MARION H., *Adjunct Assistant Professor*
M.S., University of Pittsburgh, 1971
M.S., University of Southern California, 1984
D.P.A., University of Southern California, 1985
- HARTIGAN, ROSEMARY, *Adjunct Associate Professor*
B.A., State University of New York at Stony Brook
M.A., Antioch University, The McGregor School
J.D., University of Wisconsin Law School, 1978
- HAZARI, SUNIL I., *Adjunct Associate Professor*
B.S., Maharaja Sayajirao University, 1983
M.S., Eastern Kentucky University, 1986
Ed.D., West Virginia University, 1990
- HELTERS, ERIC C., *Adjunct Associate Professor*
B.S., College of Charleston, 1966
M.S., University of Southern California, 1973
- HENRIKSEN, KERMIT, *Adjunct Professor*
B.A., Utica College of Syracuse University, 1964
M.S., University of Wyoming, 1966
Ph.D., University of New Mexico, 1971
- HOCHBERGER, JUDITH, *Adjunct Associate Professor*
B.S., Niagara University, 1972
M.S., University New York at Buffalo, 1976
Ph.D., Temple University, 1994
- HODSON, WILLIAM T., *Adjunct Professor*
B.S., U.S. Air Force Academy, 1960
M.S., University of Colorado, 1964
Ph.D., Arizona State University, 1968
- HOFEREK, MARY J., *Adjunct Professor*
Ph.D., University of Wisconsin, 1978
- HOFFMAN, EILEEN B., *Adjunct Assistant Professor*
B.S., Cornell University, 1969
M.A., Columbia University, 1970
J.D., Georgetown University, 1986
- HOLT, HARRY W., Jr., *Adjunct Assistant Professor*
B.S., Brown University, 1984
M.B.A., Dartmouth College, 1991
- HOWARD, EDWARD G., *Adjunct Professor*
B.S., Stanford University, 1960
M.B.A., Northwestern University, 1962
M.S., Georgetown University, 1969
Ph.D., Georgetown University, 1972
- HOWARD, JAMES A., *Program Director, Accounting, and Professor*
B.A., University of Nebraska, 1968
M.B.A., Syracuse University, 1976
Ph.D., George Washington University, 1991
- HOWARD, LINDA, *Adjunct Associate Professor*
Dipl., De Paul Hospital School of Nursing, 1969
M.A., Webster University, 1990
D.E., Arizona State University, 1994
- HRUNENI, GEORGE A., *Adjunct Assistant Professor*
B.A., Santa Clara University, 1966
M.A., Santa Clara University, 1967
Ph.D., University of California, 1972
- HUBER, W. DENNIS, *Adjunct Assistant Professor*
B.A., State University of New York at Buffalo
B.S., State University of New York at Buffalo
J.D., State University of New York at Buffalo
M.B.A., State University of New York at Buffalo
M.A., State University of New York at Buffalo
M.S., State University of New York at Buffalo
Ed.M., State University of New York at Buffalo
- HUGGINS-WILLIAMS, NEDRA, *Adjunct Associate Professor*
B.A., Fisk University, 1969
M.S., Howard University, 1972
Ph.D., University of Utah, 1985
- HURLEY, JAMES M., *Adjunct Associate Professor*
B.A., Georgetown University, 1975
M.A., University of Maryland, College Park, 1976
D.P.A., George Washington University, 1986
- HURLEY, MEGAN M., *Academic Coordinator and Assistant Professor*
B.S., Ithaca College, 1991
M.A., Pennsylvania State University, 1993
Ph.D., Pennsylvania State University, 1998
- IBRAHIM, HASSAN, *Adjunct Associate Professor*
B.S., Riyadh University (Saudi Arabia), 1980
M.S., George Washington University, 1984
D.S., George Washington University, 1988
- IPPOLITO, LOUIS J., *Adjunct Professor*
B.S.E.E., Newark College of Engineering, 1962
M.S.E., George Washington University, 1966
Ph.D., George Washington University, 1977
- ISHERWOOD, ALEX C., *Adjunct Assistant Professor*
B.A., San Diego State University, 1973
M.A., San Diego State University, 1975
Ph.D., University of Maryland, College Park, 1986
- JAFFE, ROGER J., *Adjunct Assistant Professor*
M.S., University of Maryland University College, 2000

Administration and Faculty

- JAIN, BHARAT A., *Adjunct Assistant Professor*
B.S., Delhi College of Engineering (India), 1983
M.B.A., Pennsylvania State University, 1989
Ph.D., Pennsylvania State University, 1992
- JEROME, ROBERT W., *Assistant Vice President, International Program Development, and Professor*
B.A., Pomona College, 1970
M.A., Fletcher School of Law and Diplomacy, Tufts University, 1972
Ph.D., University of Geneva (Switzerland), 1981
- JONES, GARY, *Adjunct Assistant Professor*
M.B.A., University of Richmond, 1989
- KASKOWITZ, GARY, *Adjunct Assistant Professor*
B.S., University of Illinois, 1983
M.B.A., Averett College, 1990
M.A., University of Maryland, College Park, 1995
- KASPRZAK, JAMES E., *Adjunct Professor*
B.S., Canisius College, 1963
Ph.D., Loyola University, Chicago, 1967
- KASSER, JOSEPH, *Adjunct Associate Professor*
M.S., George Washington University, 1978
D.Sc., George Washington University, 1997
- KAVOOSI, MASOUD, *Adjunct Associate Professor*
B.A., Bowie State University, 1974
M.A., American University, 1976
Ph.D., Catholic University of America, 1982
- KEATON, FREDERICK M., *Adjunct Assistant Professor*
B.A., Howard University, 1967
M.A., Central Michigan University, 1977
Ed.D., Western Michigan University, 1983
- KELLER, PAUL F. G., *Program Director, Computer Systems Management and Information Resources Management, and Professor*
B.S., Mansfield State University, 1963
M.S., Elmira College, 1967
Ph.D., Southern Illinois University at Carbondale, 1977
- KELLEY, KIMBERLY, *Associate Professor*
Ph.D., University of Maryland, College Park, 1998
- KELLY, DAVID, *Adjunct Associate Professor*
B.S., Massachusetts Institute of Technology, 1963
M.B.A., Columbia University, 1968
Ph.D., University of North Carolina, Chapel Hill, 1976
- KHORANA, SHAMSHER, *Adjunct Assistant Professor*
Ph.D., Bombay University (India), 1967
M.B.A., Indiana University, 1974
M.S., University of Notre Dame, 1984
- KIMZEY, CHARLES R., *Adjunct Assistant Professor*
Ph.D., Vanderbilt University, 1998
- KIRKHORN, JUDITH B., *Associate Dean, Graduate Outreach, and Associate Professor*
B.S., University of Wisconsin, Madison, 1963
M.S., University of Wisconsin, Milwaukee, 1967
Ph.D., University of Wisconsin, Milwaukee, 1977
- KLISCH, KAREN, *Adjunct Professor*
B.S., Florida State University, 1963
M.A., University of Maryland, College Park, 1968
Ph.D., University of Maryland, College Park, 1980
- KNODE, STEVEN, *Adjunct Professor*
B.S., Duke University, 1966
M.S., University of North Dakota, 1970
Ph.D., Syracuse University, 1978
- KOLASHESKI, RICHARD F., *Professor of Practice, and Professor*
B.S., Bucknell University, 1958
M.B.A., University of Georgia, 1973
Ph.D., University of Georgia, 1976
- KOROTKIN, ARTHUR L., *Adjunct Associate Professor*
B.A., Temple University, 1954
M.A., Temple University, 1956
Ph.D., Temple University, 1960
- KOVACH, KENNETH A., *Adjunct Professor*
B.A., Ohio University, 1968
M.B.A., Ohio University, 1971
Ph.D., University of Maryland, College Park, 1975
- KRAHN, STEVEN, *Adjunct Assistant Professor*
B.S., University of Wisconsin, 1978
M.S., University of Virginia, 1994
Doctoral Candidate
- KRUGLAK, GREGORY T., *Adjunct Assistant Professor*
B.A., University of Southern California, 1970
M.A., University of Southern California, 1972
Ph.D., University of Geneva (Switzerland), 1978
- KULICHENKO, NATALIA, *Adjunct Assistant Professor*
B.S., Taras Shevchenko Kyiv State University, 1983
M.S., Ukrainian Academy of Sciences Institute, 1992
- KURTH, KRISTA, *Adjunct Assistant Professor*
B.A., University of Washington, 1981
M.B.A., University of Washington, 1984
Ph.D., George Washington University, 1995
- LACKEY, G. LYNNE, *Adjunct Professor*
B.A., Bowling Green University, 1965
Ph.D., University of Kentucky, 1972
- LAKEY, BERIT M., *Adjunct Assistant Professor*
B.A., Midland Lutheran College, 1958
M.A., Fielding Institute, 1994
Ph.D., Fielding Institute, 1996
- LAMPHERE, JO ANN, *Adjunct Associate Professor*
B.S., Pennsylvania State University, 1974
M.S., State University of New York at Stony Brook, 1977
D.P.H., Columbia University, 1996
- LEBERRE, MARIA LANING, *Adjunct Assistant Professor*
B.A., University of Virginia, 1986
M.A., Ohio State University, 1988
Ph.D., George Mason University, 1997
- LEBOW, IRWIN L., *Adjunct Professor*
S.B., Massachusetts Institute of Technology, 1948
Ph.D., Massachusetts Institute of Technology, 1951
- LEIGHTON, GERALD S., *Adjunct Associate Professor*
B.Ch.E., Polytechnic Institute of Brooklyn, 1957
M.E.A., George Washington University, 1966
D.P.A., George Washington University, 1985
- LERMAN, RICHARD, *Adjunct Assistant Professor*
B.A., Brooklyn College, 1980
M.A., Brooklyn College, 1981
- LEVERING, SUSAN, *Adjunct Assistant Professor*
B.S., Temple University, 1964
M.Ed., University of Pittsburgh, 1969
Ph.D., University of Pittsburgh, 1973
- LEVINE, JERALD E., *Adjunct Professor*
B.A., Brooklyn College, 1964
M.A., University of Wisconsin–Madison, 1965
Ph.D., University of Wisconsin–Madison, 1971
- LEWIS, KATHRYN, *Adjunct Associate Professor*
B.A., Humboldt State University, 1972
M.B.A., Arizona State University, 1975
Ph.D., Arizona State University, 1983
- LEWIS, PATRICE E., *Adjunct Associate Professor*
B.A., University of Maryland, College Park, 1977
M.S., Rollins College, 1978
J.D., Howard University, 1981
- LIBURD, VINCENT, *Adjunct Assistant Professor*
B.A., University of the West Indies, 1971
M. Div., Gordon-Conwell Theological Seminary, 1978
M.A., University of Maryland, College Park, 1987
Ph.D., University of Maryland, College Park, 1996
- LIGON, JACK M., *Adjunct Associate Professor*
B.S., Virginia Polytechnic Institute, 1960
M.S., University of Pennsylvania, 1968
Ph.D., George Mason University, 1990
- LITTLE, DOUGLAS A., *Adjunct Assistant Professor*
B.S., Mount Saint Mary's College, 1985
M.A., Catholic University of America, 1989
Ph.D., Catholic University of America, 1995
- LOMBARDO, DAVID D., *Adjunct Professor*
B.A., Albright College, 1961
M.A., New York University, 1964
Ph.D., New York University, 1978
- LUDWIG, GERMAIN, *Adjunct Associate Professor*
B.A., State University of New York at Buffalo, 1968
M.S., American University, 1986
M.A., Columbia University, 1991
Ed.D., Columbia University, 1994

Administration and Faculty

- LUCIANOVIC, WILLIAM M., *Adjunct Associate Professor*
B.A., University of Rochester, 1964
M.A., Case Western Reserve University, 1970
Ph.D., Case Western Reserve University, 1972
- MACCARTHY, JOHN E., *Adjunct Professor*
B.A., Carleton College, 1976
Ph.D., University of Notre Dame, 1982
- MACKENZIE, GARTH, *Program Director, Information & Telecommunications Studies, and Associate Professor*
B.A., Johns Hopkins University, 1967
B.S., Johns Hopkins University, 1971
M.A.S., Johns Hopkins University, 1977
- MACKKEY, WILLIAM, *Adjunct Professor*
B.S., University of Pittsburgh, 1962
M.S., Rensselaer Polytechnic Institute, 1967
Ph.D., University of Pennsylvania, 1975
J.D., American University, 1981
- MADDEN, MICHAEL T., *Adjunct Professor*
B.S., Loyola College of Maryland, 1966
M.S., University of Minnesota, 1968
M.P.A., George Washington University, 1973
D.P.A., George Washington University, 1977
- MADISON, DAVID L., *Adjunct Assistant Professor*
B.S., University of Maryland, College Park, 1967
M.S., American University, 1973
Ph.D., American University, 1983
- MANGER, HAROLD A., *Adjunct Associate Professor*
B.A., Rutgers University, 1966
M.B.A., Rutgers Graduate School of Business, 1967
M.A., Fairleigh Dickinson University, 1976
Ph.D., Fairleigh Dickinson University, 1984
- MANN, CLARENCE J., *Chair, International Management Programs, and Professor*
B.A., Wabash College, 1957
LL.B., Yale University, 1963
M.A., Yale University, 1963
Dr.Jur., University of Bonn (Germany), 1967
- MARCONI, KATHERINE M., *Adjunct Associate Professor*
B.A., St. Joseph's College, 1970
M.A., State University of New York at Buffalo, 1972
Ph.D., George Washington University, 1976
- MARRON-GRODSKY, THERESA, *Associate Chair, General Management, and Program Director, Marketing Management, and Associate Professor*
B.S., Suffolk University, 1975
M.A., University of Maryland, College Park, 1978
Ph.D., University of Maryland, College Park, 1985
- MARSCHALL, SABRINA, *Assistant Professor*
B.S., University of Maryland, College Park, 1985
M.Ed., University of Maryland, College Park, 1989
Ph.D., University of Maryland, College Park, 1995
- MARTIN, MICHAEL L., *Adjunct Associate Professor*
B.A., University of Montana, 1968
M.B.A., Saint Louis University, 1972
M.S., Johns Hopkins University, 1985
Ph.D., George Mason University, 1995
- MARUTOLLO, FRANK, *Adjunct Assistant Professor*
J.D., George Washington University, 1971
M.S.A., George Washington University, 1979
D.P.A., George Washington University, 1989
- MARWANGA, RUBEN O., *Adjunct Assistant Professor*
B.Sc., Nairobi University, 1984
M.E., Fourah Bay College, 1988
Ph.D., Pennsylvania State University, 1998
- MASTEL, GREG, *Adjunct Assistant Professor*
B.A., Claremont McKenna College, 1985
B.S., New York University, 1986
Ph.D., Greenwich University, 1994
M.B.A., Heriot-Watt University (United Kingdom), 1995
- MATTHEWS, WAYNE A., *Adjunct Assistant Professor*
B.S., University of Southwest Los Angeles, 1969
M.P.A., University of Southern California, 1978
Ph.D., University of Southern California, 1988
- MAYMIR-DUCHARME, FRED A., *Adjunct Associate Professor*
M.S., Illinois Institute of Technology, 1985
Ph.D., Illinois Institute of Technology, 1987
- MAZZEI, JAMES A., *Adjunct Associate Professor*
B.A., University of Notre Dame, 1963
B.S., University of Missouri, 1974
M.S., University of Missouri, 1974
- MCCUMBER, WILLIAM H., Jr., *Adjunct Professor*
B.S.E.E., University of Oklahoma, 1960
M.S.E., University of Alabama, 1971
Ph.D., University of Houston, 1987
- MCINTYRE, BERNICE K., *Adjunct Assistant Professor*
J.D., Boston University School of Law, 1977
- MCKELVEY, CORNELIUS P., *Adjunct Associate Professor*
B.S., Philadelphia College, 1962
M.S., University of Maryland, Baltimore, 1970
M.A., George Washington University, 1973
M.Phil., George Washington University, 1985
- MCKENZIE, CHARLOTTE A., *Adjunct Assistant Professor*
B.A., California State University at Long Beach, 1974
M.S./M.B.A., Golden State University, 1987
M.S., Johns Hopkins University, 1995
- MCKINDRA, CLAYTON, *Adjunct Associate Professor*
B.S.M.E., Bradley University, 1965
M.S.M.E., Carnegie-Mellon University, 1967
Ph.D., University of Maryland, College Park, 1977
- MCLOUGHLIN, AUDRE, *Adjunct Professor*
B.S., Columbia University, Teachers College, 1957
M.S., Columbia University, Teachers College, 1965
Ph.D., University of Maryland, College Park, 1974
- MEILICH, ABRAHAM W., *Adjunct Assistant Professor*
B.S., University of California, Los Angeles, 1968
M.S.M.E., Stanford University, 1970
M.S.S.M., University of Southern California, 1986
Ph.D., Walden University, 1991
- METH, SHELDON, *Adjunct Assistant Professor*
B.S., Columbia University, 1971
M.A., Columbia University, 1981
Ph.D., Columbia University, 1977
- MICHELSON, BARTON, *Adjunct Professor*
B.A., Ohio State University, 1962
M.A., Ohio State University, 1970
Ph.D., Ohio State University, 1973
- MIERZWA, THOMAS J., *Adjunct Associate Professor*
B.F.A., University of Illinois, 1965
M.L.A., Harvard University, 1968
M.P.A., University of Southern California, 1984
- MILLER, DAVID W., *Adjunct Associate Professor*
B.A., Dartmouth College, 1956
M.A., Cornell University, 1963
Ed.D., Temple University, 1977
- MILLS, JOETTE V., *Adjunct Assistant Professor*
B.A., Rutgers University, 1978
M.P.A., New York University, 1980
Ph.D., Walden University, 1999
- MOHAMED, AHMED H., *Adjunct Associate Professor*
B.A., Ain-Shames University (Egypt), 1974
M.A., State University of New York at Stony Brook, 1981
Ph.D., Temple University, 1991
- MONACO, SALVATORE J., *Executive Director, Office of Executive Programs, and Professor*
B.S.E., Manhattan College, 1967
M.S.E., University of Michigan, 1968
Ph.D., Rensselaer Polytechnic Institute, 1974
- MONTELL, MARK L., *Adjunct Associate Professor*
B.S., University of Rochester, 1972
M.E.E., Catholic University of America, 1976
Ph.D., Catholic University of America, 1981
- MOON, SURESH M., *Adjunct Assistant Professor*
B.S., Madras Inst. of Technology, India, 1974
M.S., Indian Inst. of Technology, India, 1983
Ph.D., Washington University, 1987
- MORGAN, RONALD D., *Adjunct Assistant Professor*
B.S., University of California, Berkeley, 1959
J.D., University of California, Berkeley, 1962
M.P.A., University of Southern California, 1978

Administration and Faculty

- MORRIS, RUSSELL D., *Adjunct Associate Professor*
B.S., Ohio State University, 1963
M.B.A., Ohio State University, 1964
Ph.D., Ohio State University, 1973
- MORRISSY, J. DAVID, *Adjunct Associate Professor*
D.B.A., Harvard Business School, 1973
- MYERS, JOSEPH H., *Adjunct Associate Professor*
B.S., North Carolina State University, 1971
M.S., Carnegie-Mellon University, 1974
- NADA, NADAR, *Adjunct Associate Professor*
B.S., Alexandria University, Egypt, 1976
M.S., Moorhead State University, 1992
Ph.D., George Mason University, 1997
- NAGARAJAN, NILAKANTAN, *Adjunct Associate Professor*
M.A., Madras University (India), 1954
M.B.A., Columbia University, 1977
Ed.D., Columbia University, 1984
- NAPJUS, CHRIS N., *Adjunct Associate Professor*
B.A., Cornell University, 1963
M.S., University of Washington, 1968
Ph.D., University of Washington, 1969
M.B.A., Bryant College, 1976
- NASER, ED, *Adjunct Assistant Professor*
B.S., Jordan, 1987
M.E., George Washington University, 1991
D.Sc., George Washington University, 2000
- NASH, PETER D., *Adjunct Associate Professor*
B.A., University of Wisconsin, Madison, 1973
M.A., University of Washington, Seattle, 1975
Ph.D., University of California Berkeley, 1981
- NEIDIG, RICHARD D., *Associate Dean, Academic Affairs, and Professor*
B.A., Pennsylvania State University, 1968
M.A., Bucknell University, 1970
Ph.D., Pennsylvania State University, 1976
- NELSON, H. WAYNE, *Adjunct Associate Professor*
B.A., Portland State University
M.A., Portland State University
M.A., California State University
M.B.A., City University, Bellevue, WA
Ph.D., Oregon State University, 1993
- NEMIROVSKY, PAUL F., *Adjunct Associate Professor*
M.E., Plekhanov Institute (U.S.S.R.), 1971
Ph.D., Research Institute of the U.S.S.R. Central Statistical Administration, 1977
- NEWMAN, DAVID, *Adjunct Professor*
B.S., University of Rhode Island, 1970
M.S., Pennsylvania State University, 1971
Ph.D., Pennsylvania State University, 1974
J.D., American University, 1983
- NICOLAY, JOHN A., *Adjunct Professor*
B.A., University of Maryland, College Park, 1976
M.A., Virginia Polytechnic Institute and State University, 1986
Ph.D., Virginia Polytechnic Institute and State University, 1990
- NUSSBAUM, DANIEL A., *Adjunct Professor*
B.A., Columbia University, 1964
Ph.D., Michigan State University, 1971
- ODIONU, CHRIS, *Adjunct Associate Professor*
B.S., University of Houston, 1980
M.B.A., University of Houston, 1983
Ed.D., University of Houston, 1995
- OGUNTIN, GBEKELOLUWA B., *Adjunct Associate Professor*
B.Sc., Iowa State University, 1974
Ph.D., Iowa State University, 1979
- OUELLETTE, ROBERT P., *Program Director, Technology & Engineering Management, and Professor*
B.S., University of Montreal (Canada), 1962
Ph.D., University of Ottawa (Canada), 1964
M.B.A., New York Institute of Technology, 1988
- OZAG, DAVID, *Adjunct Assistant Professor*
B.S., University of Maryland, College Park, 1984
M.B.A., Mount St. Mary's College, 1987
- PAL, KAUSIK B., *Adjunct Assistant Professor*
M.B.A., University of Baltimore, 1988
M.S., University of Baltimore, 1991
- PANG, LESLIE, *Adjunct Professor*
B.S., University of Hawaii, 1974
M.S., University of Nebraska, 1979
Ph.D., University of Utah, 1983
M.B.A., University of Maryland, College Park, 1988
- PARHAM, GREGORY, *Adjunct Associate Professor*
B.S., Ohio State University, 1975
D.V.M., Ohio State University, 1980
M.S., The Johns Hopkins University, 1986
- PEACOCK, BRUCE E., *Adjunct Assistant Professor*
B.S., Oklahoma State University, 1978
M.S., New Mexico State University, 1984
Ph.D., University of Arizona, 1994
- PHILLIPS, BERTAND P., *Adjunct Professor*
B.S., San Francisco State University, 1954
M.S., San Francisco State University, 1956
Ed.D., Columbia University, 1965
- PILLUTLA, SHARMA, *Adjunct Assistant Professor*
B.T., Banaras Hindu University (India), 1983
M.S.S., University of Bombay (India), 1985
Ph.D., Syracuse University, 1993
- PISHEVA, DIANA, *Adjunct Assistant Professor*
Ph.D., Institute of Economics, Bulgarian Academy of Sciences, 1982
- POWER, FRANK R., *Adjunct Associate Professor*
B.C.E., Manhattan College, 1960
M.S., Cornell University, 1964
J.D., New York University, 1966
- PRICE, HARVEY S., *Adjunct Associate Professor*
B.A., Oberlin College, 1964
J.D., Harvard University, 1967
- PROCACCINO, JOSEPH A., *Adjunct Associate Professor*
B.A., George Washington University, 1973
J.D., American University, 1976
M.F.S., George Washington University, 1979
- RAIDER, ALFRED S., *Program Director, International Management, and Associate Professor*
B.A., University of Wisconsin-Madison, 1975
J.D., University of Maryland, Baltimore, 1978
LL.M., Georgetown University, 1987
- REDDY, WILLIAM D., *Adjunct Professor*
B.S., Saint Louis University, 1960
M.S., Saint Louis University, 1963
Ph.D., Saint Louis University, 1967
M.B.A., Loyola College of Maryland, 1978
- REINSCH, WILLIAM A., *Adjunct Associate Professor*
B.A., Johns Hopkins University, 1968
M.A., Johns Hopkins University, 1969
- REYNOLDS, ARTHUR, *Adjunct Associate Professor*
B.A., City College of New York, 1970
M.A., University of Minnesota, 1973
M.H.A., University of Minnesota, 1976
J.D., William Mitchell College of Law, 1977
- RHODES, SHELTON, *Adjunct Assistant Professor*
B.A., Virginia Military Institute, 1977
M.A., Howard University, 1985
Ph.D., Old Dominion University, 1994
- RICCI, FREDERICK A., *Adjunct Associate Professor*
Ph.D., Boston University, 1972
- RICHARDS, FRANCIS M., *Adjunct Assistant Professor*
B.A., California State University, Long Beach, 1968
M.S., California State University, Long Beach, 1974
M.P.A., University of Southern California, 1977
Ph.D., University of Southern California, 1978
M.G.A., University of Maryland University College, 1991
- RICHARDSON, JOHN M., *Chair, Information and Telecommunications Studies, and Professor*
B.A., University of Colorado, 1942
M.A., Harvard University, 1947
Ph.D., Harvard University, 1951
- RINKE, WOLFE, *Adjunct Associate Professor*
B.S., Drexel University, 1968
M.S., Iowa State University, 1973
Ph.D., University of Wisconsin, 1979

Administration and Faculty

- ROACH, BEN, *Adjunct Associate Professor*
B.A., St. Mary's University of San Antonio, 1973
M.A., St. Mary's University of San Antonio, 1980
Ph.D., University of Texas at Austin, 1983
- ROBERTS, JUDITH M., *Adjunct Assistant Professor*
B.A., York University, Toronto, 1968
M.A., University of Toronto, 1972
- ROMAN, CYNTHIA, *Adjunct Associate Professor*
B.A., University of Virginia, 1976
M.Ed., University of Georgia, 1977
Ed.D., Virginia Polytechnic Institute and State University, 1994
- ROSEN, THEODORE H., *Adjunct Professor*
B.A., George Washington University, 1969
M.A., Temple University, 1971
Ph.D., George Washington University, 1984
- ROSS, JANE, *Adjunct Associate Professor*
Ph.D., University of Cambridge, UK, 1987
- RUBIN, EUGENE, *Associate Dean, Graduate Studies, and Professor*
B.A., Ohio Wesleyan University, 1963
M.S., Kansas State University, 1965
M.A., University of Michigan, 1971
Ph.D., University of Michigan, 1971
- RUSSOTTO, THOMAS, *Adjunct Assistant Professor*
B.S., Stevens Institute of Technology, 1966
M.B.A., Loyola College, 1975
M.B.A., George Washington University, 1991
Ph.D., George Washington University, 1993
- RYAN, MARY E., *Adjunct Assistant Professor*
B.A., State University of New York at Binghamton, 1981
J.D., University of North Carolina at Chapel Hill, 1989
- SAAD, ASHRAF, *Adjunct Assistant Professor*
B.S., Ain Shams University, 1988
M.S., Cranfield University, 1991
Ph.D., Vanderbilt University, 1996
- SAFANOV, IGOR V., *Adjunct Associate Professor*
M.S., Polytechnic Institute (Ukraine), 1963
Ph.D., Institute of Control Science (Russia), 1977
- SAMONIS, VAL, *Adjunct Associate Professor*
M.A., Gdansk University of Technology, Poland, 1974
Ph.D., Warsaw School of Economics, 1978
- SAMPLE, TRAVIS L., *Adjunct Associate Professor*
B.S., University of Houston, 1964
M.S., Southern Illinois University, 1974
M.P.A., University of Southern California, 1987
D.P.A., University of Southern California, 1987
- SAREMI, AHMAD R., *Adjunct Assistant Professor*
B.S., Oklahoma State University, 1980
M.S., Oklahoma State University, 1983
Ph.D., Oregon State University, 1990
- SATTLER, ROGER S., *Adjunct Assistant Professor*
M.S., Loyola University (Los Angeles), 1965
M.P.A., George Washington University, 1976
M.S., Stanford University, 1978
- SAUNDERS, JOHN H., *Adjunct Associate Professor*
B.S., Pennsylvania State University, 1971
M.B.A., George Washington University, 1983
Ph.D., George Washington University, 1994
- SAVAGE, HOWARD A., *Adjunct Associate Professor*
B.A., Oklahoma City University, 1968
Ph.D., University of Texas at Austin, 1978
M.A., Johns Hopkins University, 1985
- SAX, CHRISTINA, *Adjunct Associate Professor*
Ph.D., Medical College of Virginia, 1987
- SAYALA, DASH, *Adjunct Associate Professor*
B.S., Osmania University, India, 1962
M.S., Osmania University, India, 1964
M.S., University of New Mexico, 1972
Ph.D., The George Washington University, 1978
- SAYANI, HASAN H., *Program Director, Software Engineering, and Professor*
B.S.E., University of Michigan, 1965
M.S.E., University of Michigan, 1966
Ph.D., University of Michigan, 1973
- SCHMIDT, SUZANNE, *Adjunct Assistant Professor*
B.A., Edinboro University of Pennsylvania, 1971
M.S., Slippery Rock University of Pennsylvania, 1975
Ph.D., University of Pittsburgh, 1990
- SCHWEBER, CLAUDINE, *Associate Vice President, Office of Distance Education and Lifelong Learning, and Professor*
B.A., Hunter College, City University of New York, 1968
M.A., State University of New York at Buffalo, 1970
Ph.D., State University of New York at Buffalo, 1978
- SEAVER, GEOFFERY W., *Adjunct Associate Professor*
B.S., University of Kansas, 1977
M.P.A., San Diego State University, 1981
M.S., University of Southern California, 1982
Ph.D., George Washington University, 1991
- SEGAL, SCOTT H., *Adjunct Assistant Professor*
B.A., Emory University, 1986
J.D., University of Texas at Austin, 1989
- SEIBER, MARILYN J., *Adjunct Assistant Professor*
B.A., Michigan State University, 1967
M.A., American University, 1973
Ph.D., American University, 1979
- SHAFER, EDWARD, *Program Director, Financial Management, and Professor*
B.A., Brooklyn College, 1956
M.B.A., City College of New York, 1959
D.B.A., George Washington University, 1980
- SHARMA, OM P., *Adjunct Assistant Professor*
Ph.D., Agra University, 1982
- SHERLOCK, ROBERT, *Adjunct Associate Professor*
B.S., University of Utah, 1973
J.D., University of Utah, 1976
M.P.A., University of Utah, 1985
- SHILESKEY, DONALD, *Adjunct Assistant Professor*
B.S., University of Cincinnati, 1964
M.S., University of Cincinnati, 1966
D.Sc., Washington University, 1973
- SHIRAZI, JOYCE T., *Program Director, Master of Business Administration, and Associate Professor*
B.S., Howard University, 1977
M.S., University of Tennessee, 1988
D.Sc., George Washington University, 1994
- SHOUKAT, MICHAEL M., *Adjunct Associate Professor*
B.S., Memphis State University, 1982
M.S., Air Force Institute of Technology, 1987
Ph.D., University of Missouri-Rolla, 1992
- SILBERG, CAROL A., *Adjunct Assistant Professor*
B.S., University of Maryland, College Park, 1971
M.S., Central Michigan University, 1980
Ph.D., University of Maryland, College Park, 1990
- SINGER, ABE, *Adjunct Professor*
B.E.E., City College of New York, 1961
M.S., University of Maryland, College Park, 1970
Ph.D., Johns Hopkins University, 1975
- SINGER, DANIEL, *Adjunct Associate Professor*
B.A., Rider College, 1964
M.S., State University of New York at Albany, 1966
Ph.D., University of Colorado, 1971
- SINHA, ASHOK K., *Adjunct Assistant Professor*
B.S., Patna University (India), 1963
M.S., Patna University (India), 1965
Ph.D., University of Maryland, College Park, 1971
- SMITH, GEORGE S. (STEVE), *Adjunct Professor*
B.S., Ball State University, 1966
M.B.A., Michigan State University, 1970
Ph.D., University of Arkansas, 1978
- SMITH, ROBERT S., *Adjunct Assistant Professor*
LL.B., University of Edinburgh (United Kingdom), 1981
L.P., University of Edinburgh (United Kingdom), 1982
LL.M., University of Virginia, 1986
- SNOW, FREDRICK R., *Adjunct Assistant Professor*
B.A., Grove City College, 1982
M.B.A., Penn State University, 1992
Ph.D., Kent State University, 1996

Administration and Faculty

- SPATZ, MARSHALL C., *Adjunct Associate Professor*
B.A., Brandeis University, 1966
M.A., Harvard University, 1967
Ph.D., University of Chicago, 1975
M.P.D.M., Yale University, 1980
- SPILMAN, MARY ANN, *Director of Executive Management Programs, and Associate Professor*
B.A., Rutgers University, 1974
Ph.D., Rutgers University, 1983
M.I.M., University of Maryland University College, 1997
- SQUIRES, BURTON, *Adjunct Professor*
B.S., University of Pittsburgh, 1949
M.S., Pennsylvania State University, 1951
Ph.D., Pennsylvania State University, 1961
- STALEY, BLAIR, *Adjunct Assistant Professor*
D.B.A., NOVA Southeastern University, 1997
- STANBURY, JOHN, *Adjunct Associate Professor*
B.A., St. Mary's University, 1973
M.B.A., Concordia University, 1982
M.A., Ohio State University, 1991
Ph.D., Ohio State University, 1992
- STEINHEISER, FREDERICK H., *Adjunct Assistant Professor*
B.A., University of Michigan, 1966
M.A., University of Cincinnati, 1969
Ph.D., University of Cincinnati, 1970
- STEVENS, DAVID W., *Adjunct Assistant Professor*
B.S., Virginia Polytechnic Institute and State University, 1957
M.S., Virginia Polytechnic Institute and State University, 1959
M.B.A., University of Pennsylvania Wharton School of Business, 1963
- STEWART, HELENE E., *Adjunct Professor*
B.A., Wittenberg University, 1975
M.S., Georgetown University, 1978
Ph.D., Georgetown University, 1980
M.A., Marymount University, 1986
- STEWART, JAMES J. *Adjunct Professor*
D.Sc., George Washington University, 1988
- STOKES, JOSEPH, Jr., *Adjunct Assistant Professor*
B.A., University of Massachusetts, 1969
M.B.A., University of Massachusetts, 1975
M.S.A., Johns Hopkins University, 1995
- SUTHERLAND, ALAN R., *Professor of Practice and Associate Professor*
B.F.A., Pratt Institute, 1964
Ph.D., New York University, 1984
- SULTAN, PETER L., *Adjunct Assistant Professor*
B.S., London School of Economics and Political Science, 1978
J.D., Boston University, 1983
- SWEENEY, MICHAEL, *Adjunct Associate Professor*
B.S./B.A., Aquinas College, 1975
M.B.A., University of Detroit, 1977
Ph.D., University of Kentucky, 1994
- SWIFT, BERT H., *Adjunct Professor*
B.A., University of California, Santa Barbara, 1958
M.P.A., University of Washington, 1964
Ph.D., University of Washington, 1972
- TENENBAUM, JACOB E., *Professor*
B.S., University of Pittsburgh, 1969
M.P.H., University of Pittsburgh, 1973
D.P.A., Nova University, 1984
- THIES, PAUL R., *Adjunct Assistant Professor*
B.S., University of Missouri, 1970
M.S., Utah State University, 1973
Ph.D., University of Wisconsin–Madison, 1987
- THOMPSON, CHARLES R., *Adjunct Associate Professor*
B.S., University of Nevada, 1974
M.S., Catholic University, 1979
Ph.D., American University, 1988
- THORPE, GERALD L., *Adjunct Professor*
B.A., Wayne State University, 1961
M.A.T., Harvard University, 1962
Ph.D., Wayne State University, 1974
- TOFANELLI, DAVE E., *Adjunct Assistant Professor*
B.A., Our Lady of the Lake University
M.B.A., Golden Gate University, 1983
M.S., University of Denver, 1992
- TOPLIN, MARC B., *Adjunct Assistant Professor*
B.A., Temple University, 1975
M.A., University of Maryland, College Park, 1977
M.B.A., The American University, 1986
- TSAI, HENRY W. H., *Adjunct Associate Professor*
B.S., National Chung-Hsing University (Taiwan), 1973
M.S., National Taiwan University (Taiwan), 1975
Ph.D., University of Maryland, College Park, 1985
- TUMARKIN, JOEL, *Adjunct Professor*
B.M.E., New York University, 1956
M.I.E., New York University, 1963
Ph.D., George Washington University, 1968
- USILANER, BRIAN, *Adjunct Associate Professor*
B.S., New York University, 1962
M.S., New York University, 1963
D.Sc., George Washington University, 1971
- VAN DER VEER, GRETCHEN, *Adjunct Assistant Professor*
B.A., University of Cincinnati, 1980
M.Ed., University of Vermont, 1982
Ph.D., University of Maryland, College Park, 1991
- VAN ORNAM, DONALD C., *Adjunct Associate Professor*
B.A., LaSierra College, 1958
M.S., University of California, Los Angeles, 1966
Ph.D., Peter Drucker Graduate School of Management, Claremont Graduate University, 1995
- VAZQUEZ, FEDERICO, *Adjunct Assistant Professor*
Ph.D., George Washington University, 1998
- VERSACE, STEPHEN V., *Director of Executive Technology Programs, and Professor*
B.A., University of Maryland, College Park, 1970
M.S., Central Missouri State University, 1972
Ph.D., University of Maryland, College Park, 1978
- VITRO, ROBERT, *Adjunct Assistant Professor*
B.S., Clarkson University, 1966
M.B.A., Samuel Curtis Johnson School of Management, Cornell University, 1970
- VUCETIC, JELENA, *Adjunct Assistant Professor*
B.S.E.E., University of Belgrade, Yugoslavia, 1983
M.S.C.S., University of Belgrade, Yugoslavia, 1986
Ph.D., University of Belgrade, Yugoslavia, 1990
- WASON, SATISH K., *Adjunct Assistant Professor*
B.S., Delhi University, India, 1961
M.S., Delhi University, India, 1961
Ph.D., Cornell University, 1965
- WATTS, GENEVA, *Adjunct Associate Professor*
B.A., University of Maryland, College Park, 1975
M.A., University of Maryland, College Park, 1979
Ed.D., George Washington University, 1984
- WATTS, THEODORA K., *Adjunct Associate Professor*
M.S., University of Washington, 1971
Ph.D., The American University, 1982
- WEISS, MARVIN, J., *Adjunct Professor*
B.S., City University of New York–Brooklyn College, 1961
M.B.A., City University of New York–Baruch, 1963
Ph.D., New York University, 1969
- WESTFALL, RALPH D., *Adjunct Associate Professor*
B.A., University of California, Los Angeles, 1964
M.B.A., University of California, Los Angeles, 1966
M.S.B.A., University of Southern California, 1987
Ph.D., Claremont Graduate University, 1997
- WHITE, LAWRENCE M., *Adjunct Assistant Professor*
B.A., King's College, 1964
M.A., The Fielding Institute, 1995
Ph.D., The Fielding Institute, 1997

Administration and Faculty

WILLIAMS, CATHLENE, *Adjunct Assistant Professor*
B.S., Iowa State University, 1967
M.A.E., University of Northern Iowa, 1971
Ph.D., George Washington University, 1995

WINTERS, IRVING, *Adjunct Professor*
Ph.D., University of Massachusetts, Amherst, 1988

WOOD, JAMES, *Adjunct Associate Professor*
B.S., U.S. Military Academy, 1957
M.B.A., Harvard University, 1963
Ph.D., Temple University, 1992

WOODWARD, MALCOLM S., *Adjunct Assistant Professor*
B.A., Upper Iowa University, 1982
M.P.A., Georgia Southern College, 1984
D.P.A., University of Georgia, 1992

YANG, JOSEPH, *Adjunct Associate Professor*
B.A., National Taiwan University, 1955
Ph.D., Johns Hopkins University, 1970

ZAFFARANO, MARK, *Adjunct Associate Professor*
B.A., University of Virginia, 1977
M.P.A., University of Southern California, 1979
D.P.A., George Mason University, 1992