UNION GRADUATE COLLEGE

2008 - 2009 Catalog

Provisions of this publication are not to be regarded as an irrevocable contract between the student and Union Graduate College. Union Graduate College reserves the right to make changes in this catalog, including its course offerings, degree requirements, regulations and procedures, and fees and expenses as deemed necessary by the college.

Union Graduate College is committed to assisting all members of its community in providing for their own safety and security. Information regarding campus security and personal safety, including topics such as crime prevention, campus safety law enforcement authority, crime reporting policies, crime statistics for the most recent three-year period, and disciplinary procedures is available from the Director of Campus Safety of Union College at 807 Union Street, Schenectady, NY 12308. This information is also available from the Union College website:
www.union.edu/PUBLIC/SAFETY/CommunityReport.html

STATEMENT OF NON-DISCRIMINATION
Union Graduate College does not discriminate on the basis of age, race, color, religious belief, disability, sexual orientation, or national origin. Union Graduate College's policy of nondiscrimination extends to all areas of its operations, including but not limited to admissions, student aid, athletics, employment, and educational programs. All the rights, privileges, programs, and activities generally accorded to all full-time matriculated students of Union Graduate College are accorded on a nondiscriminatory basis.

CONTENTS

DEGREES/CERTIFICATES OFFERED

School of Education	Degree	HEGIS Code
Adolescence Education: 7 – 12 with specialization possible in: English, French, German, Greek, Latin, Spanish, Biology, Chemistry, Earth Science, Physics, Mathematics or Social Studies	MAT	0803
Adolescence Education: 7 – 12 : Life Science	MS for T	0499
Adolescence Education: 7 – 12 : Math and Technology	MS for T	1799
Adolescence Education: 7 – 12 : Physical Science	MS for T	1901
Core Certification: Adolescence 7 – 12	N/A	0803
Advanced Study in National Board Certification and Teacher Leadership	N/A	0899
Advanced Study in Mentoring and Teacher Leadership	N/A	0899
Middle Childhood Extension	N/A	0804
School of Engineering and Computer Science	Degree	HEGIS Code
Computer Science	MS	0701
Electrical Engineering	MS	0909
Mechanical Engineering	MS	0910
Engineering and Management Systems	MS	4904
School of Management	Degree	HEGIS Code
Business Administration	MBA	0506
Business Administration and Law (with Albany Law School)	MBA	0506
Healthcare Management	MBA	1202
Healthcare Management and Law (with Albany Law School)	MBA	1202
Healthcare Management	Certificate	1202
Financial Management	Certificate	0504
Human Resources Management	Certificate	0515
Management and Leadership	Certificate	0506
Eight-Year Leadership in Medicine – Healthcare Mgmt (with Union College and Albany Medical College)	MBA	1202
Healthcare Management – Pharmacy Doctorate (with Albany College of Pharmacy)	MBA	1202
Healthcare Management – BS in Pharm. Sciences (with Albany College of Pharmacy)	MBA	1202

Continued

Degrees and Certificates - continued

Center for Bioethics and Clinical Leadership	Degree	HEGIS Code
Bioethics	MS	0499
Bioethics and Law (JD) (with Albany Law School)	MS	0499
Bioethics and Social Work (MSW) (with SUNY Albany)	MS	0499
Bioethics and Philosophy (PhD) (with SUNY Albany)	MS	0499
Bioethics and Public Health (MPH) (with SUNY Albany)	MS	0499
Bioethics – Specialization in Health Policy & Law	Certificate	0499
Bioethics – Specialization in Clinical Ethics	Certificate	0499
Clinical Leadership in Health Management	MS	1202
Clinical Leadership in Health Management/Pharm BS (with Albany College of Pharmacy)	MS	1202
Clinical Leadership in Health Management / Pharm D (with Albany College of Pharmacy)	MS	1202
Eight-Year Leadership in Medicine-Health Management (with Union College and Albany Medical College)	MS	1202

CONTACT INFORMATION

Administration	**Phone**
John Huppertz, Interim President	(518)388-6054
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Joanne Fitzgerald, VP for Enrollment Management	(518)388-8387
Joe McDonald, VP for Finance	(518)388-8385
Susan Bernardi, Coordinator of Career Services	(518)388-6239
Erin Callahan, Director of Student Recruitment	(518)388-8754
Bob Keenan, Director of Information Technology	(518)388-6597
Natalia Kutzer, Coordinator of Alumni Relations	(518) 388-8371
Amy Nevin, Associate Director of Institutional Research; Coordinator of Human Resources and Payroll	(518)388-6054
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Rhonda Sheehan, Director of Admissions / Registrar	(518)388-6238
Diane Trzaskos, Coordinator of Admissions	(518)388-6642
Registration / Main Number	(518)388-6148
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School of Education	**Phone**
Patrick Allen, Dean	(518)388-6361
Chris Angley, Administrative Assistant	(518)388-6361
School of Engineering and Computer Science	**Phone**
Robert J. Kozik, Dean	(518)388-8068
Janice Hollister, Administrative Assistant	(518)388-6235
School of Management	**Phone**
Mel Chudzik, Dean	(518)388-6447
Janice Hollister, Administrative Assistant	(518)388-6235
Chair, MBA Program - Mel Chudzik	(518)388-6447
Chair, MBA Healthcare Management Program – Martin Strosberg	(518)388-6299
Center for Bioethics and Clinical Leadership	**Phone**
Robert Baker, Director	(518)388-8045
Ann Nolte, Assistant Director	(518)388-8045

Union Graduate College
Lamont House
807 Union Street
Schenectady, New York 12308
Phone: (518)388-6148
Fax: (518)388-6686
Email: info@uniongraduatecollege.edu
www.uniongraduatecollege.edu

A MESSAGE FROM THE PRESIDENT

It's my pleasure to introduce you to the unique programs offered by Union Graduate College. We are located on the beautiful Union College campus in Schenectady, New York.

Union Graduate College serves full- and part-time students, providing outstanding master's-level professional degree and certificate programs in education, engineering (electrical and mechanical), computer science, engineering and management systems, business administration, health administration and bioethics.

A Union Graduate degree is defined by:

Professionalism. Small classes foster healthy discussions and debates between faculty and students, and support a dynamic case-method approach to learning as well as team projects that strengthen students' leadership and interpersonal skills.

Experience. Capstone projects, completed in collaboration with faculty or dynamic corporations and organizations, prepare students to take on complex problems and questions, assume responsibility, and become the professionals successful organizations rely on.

High Motivation. We challenge students to work hard, think innovatively innovative, and demonstrate strong self-discipline. Through collaboration and teamwork, students encourage one another and develop the ability to work effectively with others.

Return on Investment. Close relationships with leading employers in manufacturing, healthcare, financial services, education, and other fields provides students extensive opportunities to work on real projects and problems with faculty, and to land internships that provide valuable hands-on experience in their fields of interest. Union Graduate College alumni hit the ground running.

The Best Opportunities. The career and placement office serves only graduate students and the employers who hire them. These professionals have developed strong relationships with local companies and organizations. They understand the skills and qualifications graduate students need to secure top jobs and internships.

Responsiveness. Most faculty have hands-on experience in the areas they teach, and are highly sensitive to important trends and changing employer needs. They are quick to respond with courses and programs that meet the interests of students and the demand of the marketplace.

Of course, no catalog can capture the heart and soul of a college: the dedication of our faculty, the camaraderie and collegial relationships of our students, the care and concern of our administrators, and our close working relationships with the professional community are hard to express fully in print.

We invite you to start your exploration of Union Graduate College with our catalog. However, we hope that you will call us or visit the campus to get the true flavor of our offerings and our environment.

John Huppertz, PhD
Interim President

MISSION

Mission
To provide professional master's degree programs that equip promising students with the knowledge and competencies employers want and graduates need to shape successful careers.

Educational Commitment
To deliver student-centered programs, taught by committed teacher-scholars, which prepare graduates who think critically, communicate effectively, demonstrate disciplinary excellence, and are socially and ethically responsible.

Vision
To serve as a model of innovative, professional graduate education, based on strong community partnerships, that offers unique and highly effective programs and that leverage the economic and cultural vibrancy of New York's Capital Region.

Academic Conduct and Honesty
Union Graduate College is dedicated to teaching its students the most productive academic approaches, the best professional practices, and the highest ethical standards. We believe these goals will develop graduates who conduct themselves with dignity, who are recognized for their honesty, and who are productive in their respective fields. Academic honesty is one critical component of the college's purposes and ideals. Academic honesty is observed when persons think critically and independently, when they act with integrity, and when they distinguish clearly between the work done by others and their own work. The faculty demonstrate these qualities in ways appropriate to their own vocational fields. They promote academic honesty in their students and the college supports them with rules for examinations and for citing literature sources, and defines disciplinary consequences. (Refer to the student handbook for more information).

Union Graduate College
Academic Calendar 2008-2009

MAY 2008

12 Summer Registration begins (ends the first day of a class @ 4:00)

JUNE 2008

6 Spring classes end (07-08 Academic year)

9-11 Spring term exams

14 Commencement

16 Summer I – School of Management 1st term begins (ends 7/22)

Summer II – School of Engineering Computer Science term begins (ends 8/21)

17 Summer II – School of Education term begins (ends 8/18)

JULY 2008

22 Summer I – School of Management 1st term ends

23 Summer III – School of Management 2nd term begins (ends 8/28)

27 Summer III – Bioethics Program 2-Wk Pro-Seminar begins (ends 8/8)

AUGUST 2008

8 Bioethics 2-Wk Pro-Seminar ends

18 Summer II - School of Education term ends

11-22 Fall Registration (Open House 8/13)

21 Summer II – School of Engineering/Computer Science term ends

28 Summer III – School of Management 2nd term ends

SEPTEMBER 2008

9 Fall term classes begin

NOVEMBER 2008

10-21 Winter Registration

17 Fall term classes end

18-21 Fall term exams

24 Winter Break Begins

JANUARY 2009

5 Winter classes begin

FEBRUARY 2009

23 Spring Registration begins

MARCH 2009

6 Spring Registration ends

13 Winter term classes end

16-19 Winter term exams

20 Spring break begins

30 Spring term classes begin

MAY 2009

18 Summer Registration Begins for all terms (see end dates)

JUNE 2009

1	Summer I – School of Management Registration ends Summer II – School of Engineering/Computer Science Registration ends
5	Spring classes end
8-10	Spring term exams
13	Commencement

Admissions' and Registrar's Office Hours

M-F: 8:00 am – 4:30 pm; closed 1:00 pm – 2:00 pm
Wed. Extended Hours: Open until 6:30 during fall, winter and spring terms

Special Office Hours

The first week of each term, office is open until 6:30 pm to assist students and faculty.

School/Program Hours

Please contact specific offices for their hours.

School Closing

We participate in the School Closing Network which includes most major local radio and televisions stations and their websites. Decisions regarding **GRADUATE** classes are generally made by 2:00 pm and will also be posted at www.uniongraduatecollege.edu. There may be instances that only classes starting after a certain hour are cancelled.

Religious Observances

Classes will be held; students observing holidays may request make-up sessions for exams.

PROGRAMS AND ADVISORS

Office of Graduate Admissions and Registration
(518) 388-6148 FAX: (518) 388-6686

School of Education
(518) 388-6361 FAX: (518) 388-6686

School of Engineering and Computer Science
(518) 388-8068 FAX (518) 388-6686 & 6789

School of Management
(518) 388-6235 FAX: (518) 388-6686

Center for Bioethics and Clinical Leadership
(518) 388-8045 FAX (518) 388-8046

School of Education

All	Pat Allen	388-6361/ allenp@uniongraduatecollege.edu

School of Engineering and Computer Science

All	Robert J. Kozik	388-8068/ kozikr@uniongraduatecollege.edu

School of Management

Non-matriculated Students

FT & PT	Joanne Fitzgerald	388-8387/ fitzgerj@uniongraduatecollege.edu

MBA- Management

Full-Time:	A-F	Jay Carlson	388-6738/ carlsonj@uniongraduatecollege.edu
	G-O	Zhilan Feng	388-6236/ fengz@uniongraduatecollege.edu
	P-Z	Rudy Nydegger	388-6538/ nydegger@uniongraduatecollege.edu
Part-time		Alan Bowman	388-6297/ bowmana@uniongraduatecollege.edu
Accelerated (5 yr)		Jim Lambrinos	388-6253/ lambrinj@uniongraduatecollege.edu
International:		Mel Chudzik	388-6447/ chudzikm@uniongraduatecollege.edu

MBA-Health Students

Full-time:	Jim Lambrinos	388-6253/ lambrinj@uniongraduatecollege.edu
Part-time:	Marty Strosberg	388-6299/ strosbem@uniongraduatecollege.edu
Accelerated (5 yr)	Jim Lambrinos	388-6253/ lambrinj@uniongraduatecollege.edu
International:	Marty Strosberg	388-6299/ strosbem@uniongraduatecollege.edu

Law Students

JD/MBA	Mel Chudzik	388-6447/ chudzikm@uniongraduatecollege.edu

Pharmacy Students

MS & MBA	Jim Lambrinos	388-6253/ lambrinj@uniongraduatecollege.edu

8 Year Med

MS/MBA	Marty Strosberg	388-6299/ strosbem@uniongraduatecollege.edu

Certificates		
HR	Michele Paludi	388-6596/ paludim@union.edu
Finance	Mel Chudzik	388-6447/ chudzikm@uniongraduatecollege.edu
Health	Jim Lambrinos	388-6253/ lambrinj@uniongradutecollege.edu
Mgmt./Leadership	Michele Paludi	388-6596/ paludim@union.edu

Center for Bioethics and Clinical Leadership

All BE	Robert Baker	388-6215/ bakerr@union.edu
	Ann Nolte	388-8045/ noltea@uniongraduatecollege.edu
	Rosamond Rhodes	212-241-3757/ rosamond.rhodes@mssm.edu
MS CL	Martin Strosberg	388-6299/ strosbem@uniongraduatecollege.edu
Certificates	Ann Nolte	388-8045/ noltea@uniongraduatecollege.edu

GENERAL PROGRAM INFORMATION

LOCATION

Union Graduate College is located on the campus of Union College in Schenectady, NY. As Union Graduate College contracts with Union College for a number of services, this catalog refers to some policies and offices that are part of Union College.

UNION UNIVERSITY

Union Graduate College is part of Union University, a federation of independent institutions. Other members are Union College, Albany Medical College, Albany Law School, Dudley Observatory, and Albany College of Pharmacy. Each has its own governing board and is responsible for its own programs. There are several programs jointly offered by Union University Schools.

HISTORY OF UNION GRADUATE COLLEGE

Union Graduate College was formed in 2003 from the graduate programs of Union College. Bolstered by expanding enrollments in all graduate programs, and the growing regional demand for full- and part-time graduate study, a need for a new professional graduate college was recognized. At the same time, this move clarified and strengthened Union College's reputation as a nationally-recognized leader in undergraduate liberal arts and engineering education.

Union Graduate College consists of three graduate schools and a center: the School of Management, the School of Education, the School of Engineering and Computer Science, and the Center for Bioethics and Clinical Leadership.

Union Graduate College is a part of Union University, a federation of independent undergraduate and graduate institutions, currently consisting of Union College, Albany Medical College, Albany Law School, Dudley Observatory and Albany College of Pharmacy. Established in 1873, the University has a board of governors made up of representatives of the member institutions' boards of trustees. The president of Union College serves as the chancellor of Union University.

Union Graduate College believes in providing an educational environment characterized by high faculty-student interaction and small class size.

Union Graduate College values its Union College heritage and its rich and multi-varied connection to the liberal arts and sciences. In fact, it was founded on the premise that these connections will enrich professional graduate education. Local, national, and global markets are embedded in political, economic, and cultural systems. As Union Graduate College goes forward, it will build on its historical foundations.

PROGRAMS OF STUDY

Union Graduate College, through its graduate schools and center, offers the following graduate degrees: Master of Business Administration, Master of Science, and Master of Arts.

Master of Science degrees can be earned in secondary education, clinical leadership in health management, bioethics, computer science, electrical or mechanical engineering, and engineering and management systems. The Master of Arts is awarded in teaching. The Master of Business Administration program offers an MBA and an MBA in Healthcare Management.

Union Graduate College also offers several certificate programs (more information under **"Certificate Programs"**).

Academic Requirements

Students may matriculate as either part-time or full-time students depending on their program (see the Admissions Information section of this catalog). Students are considered full-time if they are enrolled in two or more courses per term (fall, winter, and spring). Students must finish their degree requirements within six years of matriculating at Union Graduate College. A grade point average (GPA) of 3.0 is required to maintain good standing and to graduate.

DEGREED PROGRAMS:

MS Programs

A minimum of one academic year of course and thesis work is required for the Master of Science degree in most programs. This is equivalent to nine to twelve (depending on program) full courses, which may include a two-course thesis.

The Master of Science in Engineering and Management Systems requires eleven courses.

The Master of Science degrees in Electrical Engineering, Mechanical Engineering, and Computer Science require between nine and ten courses.

The Master of Science for Teachers degree requires a minimum of eleven courses, including thesis work.

The Master of Science in Bioethics degree candidates must pass a capstone course and complete a master's project, which includes a presentation by the student. Twelve courses are required.

The Master of Science in Clinical Leadership requires twelve courses.

MAT Program

A minimum of one academic year of course and thesis work is required. This is equivalent to 16 courses.

MBA Program

The MBA degrees offered by the School of Management require the completion of twenty courses. Full-time students must complete an internship.

CERTIFICATE PROGRAMS

School of Education

Certificate of Advanced Study Programs

- Certificate of Advanced Study in National Board Certification and Teacher Leadership
- Certificate of Advanced Study in Mentoring and Teacher Leadership

School of Management

The School of Management offers four certificates:

- Financial Management **(Advisor, Mel Chudzik)**
- Healthcare Management **(Advisor, Jim Lambrinos)**
- Human Resource Management **(Advisor, Michele Paludi)**
- Management and Leadership **(Advisor, Michele Paludi)**.

These are six-course programs, and four of the courses may be applied toward an MBA. Two grades of C or C+ (or one grade of F) in a management certificate program will result in dismissal from the program. For MBA students wishing to get a certificate, up to four (4) applicable courses from the MBA program can be used for the certificate. This means two additional courses beyond the requirements for the MBA degree will be required for a certificate.

Center for Bioethics and Clinical Leadership

The Center for Bioethics and Clinical Leadership offers two certificates:

- Bioethics with a Specialization in Clinical Ethics
- Bioethics with a Specialization in Health Policy & Law

These are four-course programs, and may be applied toward the MS in Bioethics. One grade of C+, C, or F in a bioethics certificate program will result in dismissal from the program.

EXTENSION PROGRAMS

School of Education

- Middle Childhood Extension

JOINT DEGREE PROGRAMS

Accelerated joint degree programs in conjunction with Union College lead to undergraduate degrees in various disciplines and graduate degrees in business, secondary education, mechanical engineering, electrical engineering, or computer science areas.

Union College undergraduate students who want to enter combined bachelor's-master's degree programs must apply for graduate admission to Union Graduate College no later than the end of the fall term of their senior year. A cumulative grade point average of 3.0 is required. Students are encouraged to apply as early as their sophomore year for the MBA and Engineering and Computer Science programs. The MAT program requires students to apply after the start of their eighth term and before the conclusion of their tenth term. Acceptance into a program may enable students to apply up to three 500-level graduate courses for credit in fulfillment of their undergraduate degree at Union College and their graduate degree at Union Graduate College, depending upon their program of study.

Union Graduate College also offers opportunities for joint degrees with SUNY Albany, Mt. Sinai School of Medicine-NYU and the following Union University institutions: Albany Medical College, Albany Law School, and Albany College of Pharmacy. For specific degrees/programs offered, see the "Degrees / Certificates Offered" Section.

CHARTER AND ACCREDITATION

Union Graduate College is fully accredited by Middle States Association of Colleges and Secondary Schools. It is also chartered by the New York State Board of Regents and was accredited by the Regents in September 2004.

The MBA program is accredited by AACSB-International (Association to Advance Collegiate Schools of Business), the world's leading business school accrediting body. Union Graduate College's program is unique in being the smallest of all AACSB accredited business programs and one of only 28 accredited programs—along with such institutions as Harvard University, Stanford University, and Dartmouth College—that focus solely on graduate degrees. Less than 30 percent of all business programs are accredited nationwide. The Commission on Accreditation of Healthcare Management Education and AACSB-International dually accredit the Healthcare Management MBA program.

The MAT is accredited by The Teacher Education Accreditation Council. It was the first New York State education program to be accredited by TEAC.

THE ACADEMIC CALENDAR AND COURSE LOAD

Union Graduate College has adopted the Union College trimester system approved by the New York State Department of Education in 1966. It divides the nine-month academic year into three terms of ten weeks each. There are also two summer sessions of five weeks each for the MBA programs and one eight to ten week session for other programs. The Academic year starts with the beginning of the summer sessions and concludes with the spring semester. Under this system each course equates to 3 1/3 semester hours.

Full-time course load requires a minimum of two courses per term, or six courses during fall, winter and spring terms. A typical trimester course load is three courses per term during fall, winter and spring terms.

OFFICE OF GRADUATE ADMISSIONS AND REGISTRAR

Rhonda Sheehan, Director (518) 388-6238

The Office of Graduate Admissions and Registrar handles all matters dealing with admissions, registration, class schedules, grades, academic records, graduation, international student services, veterans affairs, and certification of attendance or eligibility in such areas as veterans' benefits, government loan deferment, insurance, and other policy issues.

GENERAL INFORMATION

ALUMNI RELATIONS (518) 388-8371

Union Graduate College's Alumni Relations Office serves as a liaison between the college and its growing alumni network. Alumni are encouraged to attend events in major cities across the nation, as well as to serve as contacts for prospective students, mentors, speakers, and to provide career counseling for current and former students. Alumni are also encouraged to keep UGC informed of news and accomplishments, both personal and professional, by contacting alumni@uniongraduatecollege.edu. This information is generally published in our UGC newsletter, *Vision*, in an effort to keep alumni aware of one another's accomplishments since completing their program of study.

Union Graduate College alumni from the School of Management or the School of Engineering and Computer Science may return to take two additional courses at a reduced rate of 50% of the current tuition. These courses cannot be used toward another degree or certificate, but would serve as an opportunity for alumni to expand their knowledge base within their field of study.

ATHLETICS FACILITIES (518) 388-6284

The Alumni Gymnasium offers an eight-lane swimming pool with seating and a diving area, a state-of-the-art cardio fitness center, five racquetball and three squash courts, as well as an exercise room, locker rooms, and offices. Alumni Gym has a large weight room and two aerobics rooms.

The Memorial Field House contains a one-tenth mile indoor track, two basketball courts, and a multi-station universal gym.

The all-weather, artificial turf field is the main outdoor facility for a very active intramural program.

BOOKSTORE OF UNION COLLEGE

Reamer Campus Center (518) 388-6188

The Union College Bookstore provides Union Graduate College students the tools needed to achieve academic excellence, including computers and computer peripherals, in addition, of course, to textbooks and school supplies. The Bookstore also carries a large variety of emblematic products, (i.e., apparel, glass-ware, decals, etc.), candy and snacks, health and beauty care products, recorded CD's, film and film developing, general reading books, magazines and magazine subscriptions, online shopping, textbook buyback, and much more. The staff is always happy to accommodate any special needs required. For more information, visit www.Bookstore.union.edu.

CAMPUS CENTER-REAMER

There is no smoking in the Reamer Campus Center, including the building doorways. Alcohol and pets may not be brought into the building. Bicycle riding or rollerblading is not allowed. A bicycle rack is located by the front entrance for your convenience.

An ATM and change machine are located on the first floor of the Atrium. A pool table, pinball machine, and big screen T.V. are located in the 4th floor lounge.

To reserve Reamer Campus Center rooms, space or tables for the promotion of campus events or fundraising, please call the Office of Events at 388-6098. To reserve Chet's; Patio; Dutch Hollow Restaurant; Upper class Dining; call Dining Services. Registered officers of Student Activities groups may also schedule the Student Activities Workroom (CC 404A).

CAMPUS SAFETY

Emergencies 911
Non-Emergency Request for Service (518) 388-6911

The Campus Safety Office is located at the Inn at College Park and provides safety services for Union Graduate College.

Campus Safety provides a 24-hour, seven-day per week operation. Services include the operation of the control center; vehicular, bike, and foot patrols; preventative patrols; and community patrols. The control center monitors fire alarms and receives emergency calls (911) and requests for service (6911 or 6178). Among the many services provided are fire safety inspections and upkeep of life-safety systems and equipment; emergency response to persons in need of assistance for injury or other conflict; crime prevention and investigation; conflict resolution; lost and found; student escorts; student access to rooms, and response to problems involving safety and security of students, faculty and staff.

The business office is open Monday through Friday from 8 am to 4:30 pm for all non-emergency business, including vehicle registrations, lost and found, and parking tickets. Information regarding campus security and personal safety including topics such as crime prevention, campus safety law enforcement authority, crime reporting policies, crime statistics for the most recent three-year period, and disciplinary procedures is available from the Director of Campus Safety at 807 Union Street, Schenectady, N.Y. 12308.

For further information: http://www.union.edu/PUBLIC/SAFETYU

CAREER SERVICES OFFICE (518) 388-6239

The Career Services office is committed to offering personalized assistance to Union Graduate College students. By actively pursuing opportunities to network and build

relationships with alumni and employers, we continue to link with successful professionals in the business community. Services include but are not limited to:

- Constructive critique of student resume, cover letter and job search correspondence;
- Assistance with job and internship search strategies;
- Development of professional career action plans;
- Providing feedback on interviewing and networking skills;
- Negotiation assistance with salary and job offers.

In addition, the Union Graduate College Career Services Office provides a wide variety of special programs and events throughout the academic year to help prepare graduate students for their job search.

For more information, visit the Union Graduate College website and click "Career Assistance Services". To schedule an appointment, contact Susan Bernardi, Coordinator of Career Services, at bernards@uniongraduatecollege.edu .

CLASSROOMS:

Union Graduate College utilizes the classrooms of Union College on their campus. Primarily classes are held in:

Humanities
Social Sciences
Olin
Bailey

THE OLIN BUILDING

The $9 million Olin Building introduced two new high-technology classroom formats to Union Graduate College. The first is a Collaborative Computer Classroom. These rooms contain all the electronic presentation tools available in the Electronic Presentation Classroom. The lectern, however, contains only a single computer type (Windows or Mac). These rooms contain eight to twelve desktop computers for shared use by up to 36 students. Depending upon class size, no more than four students collaborate on a single computer. All computers are linked to a high-quality, high-volume laser printer in each classroom. These classrooms are ideally suited for demonstrations of course and/or management software and group-oriented problem solving. Four such classrooms with Windows PCs and one classroom with Macintosh computers are available to Union Graduate College.

The Olin Building also houses a Computer Lab classroom. This facility is similar to the Collaborative Classrooms, but is larger in size and allows up to 40 students per class. It currently contains 25 PCs. This room is ideally suited for language-based instruction and can also be used to teach simulation and other computer-intensive subjects.

Although Olin classrooms and electronic classrooms elsewhere on campus are in heavy demand during the day, Union Graduate College's evening program schedule means the Institution has no trouble using desired rooms. All Graduate College faculty have file storage space on a Windows-2000 server. There is also a course area in which to post files for student access.

CLERY ACT

Union College is committed to assisting all members of the Union College and Union Graduate College communities in providing for their own safety and security. Information regarding campus security and personal safety including topics such as, crime prevention, Campus Safety law enforcement authority, crime reporting policies, crime statistics for the most recent three year period, and disciplinary procedures is available from the Director of Campus Safety at 807 Union Street, Schenectady, NY, 12308. This information may also be accessed from the Union College Campus Safety web page at www.union.edu/PUBLIC/SAFETY/CommunityReport.html

COMPUTING:

Computing Facilities:

Non-workstation computing is conducted on *idol* and *dutch*. Both are DEC Alpha Servers 2100 4/275 running Compaq TruUNIX64. Applications on idol include Internet access, e-mail, secure-telnet, secure-ftp, and other Internet applications. Dutch has various programming languages and software packages such as C++, Prolog and MatLab. Idol and dutch accounts may be accessed through Windows or Mac workstations from individual offices, electronic classrooms, Information Technology Services (ITS) computer labs, special departmental labs (including the Lamont House Graduate Student Computer Lab), and dial-in modems. Several terminals and computers are also located in the College Center.

Numerous computer labs are available for student use. Typically, these labs are available on a 24-hour, 7-day-per-week basis. Students may use pre-installed software for course- and career-related purposes. Personal software may not be installed; work must be saved to a student's own storage media. Graduate College students may use the computer laboratory in Lamont House (for graduate student use only). The Windows Lab, Mac Lab and Graphics Lab on the first floor of Steinmetz Hall are also available. Steinmetz labs are staffed by student consultants and are adjacent to Information Technology Services, where additional college employees can assist with problems during regular working hours. Graduate College students may also use the Olin Learning Center, and the Statistics Lab (located in the Social Science Building). All labs are equipped with printers.

Internet

Currently, Union Graduate College has one OC3 line with a dedicated 20 Mbps of Internet access. Since the OC3 line is capable of up to 155 Mbps, there is plenty of room

for future growth. Internet use has grown substantially for student and faculty research purposes. However, available capacity is more than adequate to meet institutional needs.

Laboratories
Laboratories frequently used include the following

- Electrical Engineering Labs (In S&E)
  N102 - Electronics lab
  N104 - Computer lab
  N108 - Microprocessor lab
  N206 - Electronics lab
- Mechanical Engineering Labs
  S&E 201 - Computer lab
  S&E 205 - Computer lab
  Butterfield - Mechanics lab
- Computer Science Labs
  S&E - S004 Computer lab
  S&E - N102 Electronics lab
  S&E - N104 Computer lab
  Olin - 110 Computer lab

For out-of-classroom work, students use study and group meeting space in Lamont House. Almost the entire lower level of the building is dedicated to student use.

Lamont House Graduate Center Laboratory
The Graduate Student Computer Laboratory is located on the lower level of Lamont House. It includes 20 Windows workstations and document scanner. The lab is staffed by student technicians 30 hours per week. Laser printers are provided for student use. Applications on the lab's Pentium machines include:

- Analysis applications: JMP IN statistical software, SPSS, and SAS
- Course-specific applications: AweSim, ©Risk for Windows, Storm
- Databases: Access
- Presentation packages: PowerPoint
- Spreadsheets: Excel
- Word processing: Word
- Audio and Video capture and editing software
- Internet: Internet Explorer, Windows FTP for Windows, Telnet for Windows

Lamont House is also completely accessible via wireless connection.

Network Infrastructure:
Union Graduate College's main network connects all computers located in offices, labs, and student residence halls. The network uses fiber optic cables between buildings and intelligent hubs (with 10BaseT/100BaseT technology) within buildings. Each workstation (Windows, Mac, or Unix) is a 10BaseT or 100BaseT node on the network. The network has been very reliable and responsive.

Union Graduate College has also established a wireless network in Lamont House. Access to this wireless network is available in Schaffer Library, the Nott Memorial, the Olin Center High-Tech Learning Center, all Olin Center electronic classrooms, the Schaffer Library Plaza, and several other study space locations on campus.

On-line Learning:
Union Graduate College strongly believes in the integration of online learning technology with traditional learning modalities. A number of our traditional classroom courses use online technology to supplement the classroom environment. Our MS in Bioethics is our first online degree program, and contains short on-campus components.

Union Graduate College uses the Blackboard Learning System, a Web-based server software platform that offers industry-leading course management, an open architecture for customization and interoperability, and a scalable design that allows for integration with student information systems and authentication protocols.

Union High-Tech Learning Center
Located in the Olin Building, the Center is designed for campus-wide group study, tutorials, faculty/student interaction, and classroom breakout areas. The Center includes conference and seminar rooms that can seat up to 15, smaller group study rooms for up to six, and a central open study space. The Center provides access to the Schaffer Library Instructional Technology Center and has full computer and VCR capabilities. There are four Windows computers, two Macintosh computers, network connections for laptops, and a color laser printer.

Union Macintosh Computing Lab
Located in Steinmetz Hall, this lab contains six computers using the Mac OS and equipped with CD-ROM drives. The lab offers free-dot matrix printing and both black and white and color laser printing for a minimal fee. One of the Macintosh workstations is connected to an HP ScanJet scanner. Scanned images can be edited with Graphics Converter with 1200 ppi image resolution. Each machine has the following applications:

- Analysis applications: Mathematica
- Course-specific applications: Fractals and Chaos, Geometer's Sketchpad, OzTek
- Graphics packages: PowerPoint, Graphic Converter, CA Cricket Graph III, Photoshop Elements
- Spreadsheets: Excel
- Word processing: Word
- Multimedia: iMovie, iTunes
- Audio and Video capture and editing software
- Internet: Internet Explorer, Mac SSH Telnet, Mac SSH FTP, and Dreamweaver for web page development

Union Social Sciences Statistics Lab (Stat Lab)
The Stat Lab has 13 desktop computers and one multimedia notebook with an LCD projection plate for classroom use. Installed software includes: SAS, SPSS, P-Stat,

RATS, Limdep, Lindo, MacroBytes, MathCAD, MicroCase, Micro-TSP, Warwick DEA, E-Views, Great American History Machine, and Notebuilder.

Data sets available include: CITIBASE (quarterly updates), EconLit on CD-ROM (quarterly), International Financial Statistics (CD-ROM), Penn World Tables, U.S. Dept. of Transportation datasets (several CD-ROMs), Women's Indicator (UN CD-ROM), and World Resources Database.

Union Steenstrup Graphics Lab
Located in Steinmetz Hall, this lab offers six Windows computers with CD-RW drives, running Windows XP and connections for four laptop computers. As with the other labs, this lab offers free dot-matrix printing and both black and white and color laser printing for a minimal fee.

Two PC workstations are connected to HP ScanJet scanners. Scanned images can be edited with Paint Shop Pro with 1200 ppi image resolution. Each machine has the following applications:

- Analysis applications: Matlab, Mathematica, MathCad, SPSS
- Course-specific applications: E-views
- Databases: Access
- Graphics packages: PowerPoint, Paint Shop Pro
- Spreadsheets: Excel
- Word processing: Word
- Internet: Internet Explorer, FrontPage for web page development
- Audio and Video capture and editing software
- Programming Languages: Visual C++, Visual Basic

Union Windows Computing Lab
Located in Steinmetz Hall, this lab offers ten Pentium computers (equipped with CD-RW drives) running Microsoft Windows XP and five iMACs dual booting with MAC OS and Windows operating system. Students may use earphones for applications with sound. The lab offers free dot-matrix printing and with both black and white and color laser printing for a minimal fee. Each computer has the following applications:

- Analysis applications: Matlab, Mathematica, SPSS, SAS, MathCAD
- Course-specific applications: E-views
- Databases: Access
- Spreadsheets: Excel
- Word processing: Word
- Graphics packages: PowerPoint, Paint Shop Pro, Photoshop Elements
- Internet: Internet Explorer, SSH Secure FTP for Windows, SSH Secure Telnet for Windows, and FrontPage for web page development
- Programming languages: Visual C++, Visual Basic

COPY CENTER

Reamer Campus Center Room 102 (518) 388-6640

• Hours: 8:30 am - 4:45 pm Monday through Friday

The Copy Center offers state of the art high-speed digital printing and photocopying. Services include full color photocopying, scanning, scan to disk, transparencies, carbonless paper, spiral binding, cutting, and more. The Copy Center also can assist you with the layout of special projects. For information contact the Copy Center at 388-6640.

DINING FACILITIES (518) 388-6050

Dutch Hollow, located in the Reamer Campus Center, features fast food and much more. Beverages, pizza, ice cream, submarine sandwiches, and "broiled to order" items are readily available before and after evening classes from 7:30 a.m. to 12:00 a.m. Specials are served from 11:30 a.m. to 2:00 p.m., and 5:00 to 7:30 p.m., Monday through Friday. Another popular spot is the Rathskellar, opened by students in the 1950s and located in the basement of Old Chapel.

HEALTH INSURANCE - STUDENT

Office of Graduate Admissions and Registration
Lamont House (518) 388-6148

All full-time students are required to have health insurance. All full-time students should go to www.gallagherkoster.com and click on Student Access to select Union Graduate College from the drop down menu. First time To either enroll or waive out of insurance prior to their first term of study. Information may be obtained at www.uniongraduatecollege.edu or by calling (518)388-6642.

If a student changes course load from part-time to full-time they are required to file a change of load/status form with the admissions/registrar office. They also will be required to either enroll or waive out of the health insurance once full-time.

Union Graduate College
Health Service Providers Listing

(This listing is for your convenience and information only; these are not professional recommendations.)

Local Hospitals

Ellis Hospital:	1101 Nott Street Schenectady, NY12308 Emergency Department: (518)-243-4121 Business Office: (518)-243-1500
Ellis Hospital: **McClellan Campus**	600 McClellan Street Schenectady, NY 12304

Emergency Department: (518) 382-2222
Business Office: (518) 382-2000

Locations for Immunizations:

St. Clare's Family Clinic (Located on the first floor in Cushing Center at St. Clare's hospital)
600 McClellan St.
Open: M-F 8am-4pm
Phone Number: (518)-382-2260
Immunization charges: MMR - $60.00
PPD - $25.00
(**Must be established patient)**

Schenectady County Public Health Services (between State and Union Street)
600 Franklin St.
Open: Tuesday and Wednesday 9am–noon and
Thursday 9am-11am-must call ahead for appointment
Phone Number: (518)-346-2187
Immunization charges: MMR - $10
PPD - $10-administered on Tuesdays and read on Thursdays

Schenectady Free Clinic (between State and Union Street)
(For students who do not have insurance)
600 Franklin St.- Rm 205
Open: Monday and Thursday 10am-5pm, first come, first serve
Phone Number: (518) 344-7067

Mental Health Counselors:

Schenectady:
Kevin E. Keller & Assocs., PhD.
1575 Union Street
Schenectady, NY 12309
(518) 374-0511

Lee Nagel
1583 Union Street
Schenectady, 12309
(518) 374-7347

Lisa Braun
1401 Union Street
Schenectady, NY 12308
(518) 381-4105

Erica Ellis PhD. and
Deborah Felsman, Ph.D.
2310 Nott Street
Niskayuna, NY 12309
(518) 372-6080

Clifton Park and Saratoga:
Frank Arcangelo and Jerry Berger
63 Franklin Street
Saratoga Springs, NY 12866
(518) 587-0499

Guilderland:
Terrance Mooney
2280 Western Ave.
Guilderland, NY 12084
(518) 456-5056

LIBRARIES:

SCHAFFER LIBRARY

Hours: 8 am - 1 am, Monday – Thursday
8 am - 11 pm, Friday
10 am - 10 pm, Saturday
11 am - 1 am, Sunday
(Special hours posted for examination and vacation periods.)

Services

Students must come to the library's Circulation Department at least one time to register using their UGC picture identification card. Students issued a replacement identification card should also check with the Circulation Department. Please call 388-6280 with any questions about registering with the library.

UGC students in good standing with the library may borrow circulating library materials and obtain research materials through interlibrary loan at no charge. UGC students are subject to all library rules, regulations and fine schedules.

Access to library bibliographic and full text databases and electronic journals is available from library computers located on the first floor of the library and in campus computer labs. Students should consult with Information Technology for information on obtaining access to the campus network from a home computer. Students can reach the IT department at 388-6293 between 8:30am and 5:00pm Monday through Friday.

Individual instruction on using library resources as well as assistance in using the Interlibrary Loan system is available at Schaffer Library Reference Desk most hours the library is open. Please call 388-6281 with any questions about using library resources. Please call 388-6612 with any questions about Interlibrary Loan.

Hours and general information about Schaffer Library and library services are posted on the Library Web: http://www.union.edu/PUBLIC/LIBRARY/. The librarian liaison to UGC is Mary Cahill. Students with any questions or concerns about library services may contact Mary by phone (388-6612) or email (cahillm@uniongraduatecollege.edu).

SCHOOL OF EDUCATION LIBRARY

Accessible 24 hours a day

The School of Education's Curriculum Library (located in the basement of Lamont Graduate Center) is a non-circulating collection of books, magazines, articles, textbooks, and other professional materials that have been purchased and/or donated to the education program. The School of Education has accumulated substantial holdings on current and historical topics central to teachers, schools, and teaching in each of the disciplines. National Board Certification Support Groups use the library as an educator's professional library.

WRITING CENTER

2nd Floor Schaffer Library (518) 388-6058

Hours: 2:30 pm - 5 pm, Monday - Friday
7 pm - 10 pm, Sunday – Thursday

The Writing Center offers help to the College community with all kinds of writing: papers, theses, reports, résumés, etc. The director is assisted by trained student tutors. Appointments are not necessary, and brief questions can be answered on the phone (388-6058) or by e-mail (marm@union.edu.). Handbooks, dictionaries, and other writers' aids are available for student use.

MEDIA SERVICES OF UNION COLLEGE (518) 388-6438

The Media Services Department has audio/video equipment that students or student groups may rent. For more information or to make arrangements, phone the office between 8:30 am and 4 pm at ext. 6438 or stop by the office in Schaffer Library room 207. Please request equipment well in advance. Rental fees apply except when requested for an academic class session.

PARKING POLICY AND TRAFFIC REGULATIONS

The parking policy and traffic regulations apply to anyone who has a car on campus. This includes students, faculty, staff and visitors. The number of parking spaces on the campus is not sufficient to accommodate a vehicle for every student and employee (while there are generally enough parking spaces to accommodate the number of registered cars at any given time, it is not possible for everyone to park right next to the place where he/she works or attends classes.) This policy is designed to manage the available spaces as well as to maintain open areas for traffic flow and safety purposes.

All roadways on campus are considered fire lanes to ensure that emergency vehicles have access to all buildings and residence halls. No parking is allowed in fire lanes. The

campus speed limit is 15 miles per hour on all campus roadways and in parking lots. Violators will be ticketed. Reckless driving or driving under the influence will most likely result in immediate suspension of privileges pending the adjudication of Conduct Charges. For a complete list of regulations governing parking and driving on campus, including possible sanctions for violations, you may consult the Campus Safety Website: http://www.union.edu/PUBLIC/SAFETY/PoliciesAndRegulations.html or go to the Campus Safety Office for a hard copy, which you will receive when you register your vehicle.

TROLLEY (518) 248-5111

The college trolley is a source of safe transportation provided and maintained by the Campus Safety Office. The 24-passenger trolley operates on a standard schedule of 6 pm to 2 am Sunday through Thursday and 6 pm to 4 am on Friday and Saturday. The trolley follows a defined route through the surrounding neighborhood streets, making scheduled stops at the Reamer Campus Center and the Student Center located in Old Chapel. A schedule of the trolley route can be found inside the trolley, in the Reamer Center near the newspapers, in Old Chapel, and is distributed to each Residence Hall.
For further information: http://www.union.edu/campussafety/services.php

VEHICLE REGISTRATION

All vehicles on campus must be registered annually. However, because of the limited number of spaces, registration does not guarantee a parking space. To register:

- Go to Campus Safety at The Inn (near corner of Nott and Erie)
- Secure an ID card
- Complete Vehicle Registration form
- Bring copy of car registration
- Bring driver's license
- Pay $15 annual fee (check to Union College or Cash)

Temporary registration can be obtained for visitors and members of the community who will have a car on campus for less than two weeks. The cost is $3. Failure to register your vehicle will result in tickets and fines.

VETERANS ADMINISTRATION EDUCATIONAL BENEFITS

Students who are eligible to receive educational benefits under the various chapters administered by the V.A. may obtain more information by contacting the Office of Graduate Admissions and Registrar at 388-6295. There are more details available in the Financial Aid Section.

ADMISSIONS INFORMATION

Union Graduate College's Office of Admissions and Registrar has a friendly and helpful staff waiting to assist students through the application process. We welcome applications from both full- and part-time applicants. The office, which is located in Lamont House, oversees all admissions, registration and graduation processes. Please feel free to contact us at (518) 388-6148 with any questions.

CONTACT INFORMATION

Erin Callahan (518) 388-8754
Director of Student Recruitment

Joanne Fitzgerald (518) 388-8387
Vice President for Enrollment Management

Rhonda Sheehan (518) 388-6238
Director of Admissions and Registrar

Diane Trzaskos (518) 388-6642
Coordinator of Admissions

GENERAL REQUIREMENTS FOR ADMISSIONS

Evidence of intellectual achievement, motivation, and aptitude are required for admission to graduate programs. All students must have or be a candidate for an undergraduate degree from an accredited college before applying for graduate admissions status. A grade point average of "B" (3.0 cumulative index) or better in undergraduate work is expected for admission. The Admission Committees attempts to meet the desire of the Board of Trustees for broad geographic and socioeconomic distribution in the student body. We also accept students who will broaden the range of backgrounds and lifestyles within the College community.

APPLICATION – FILING DATES

Accepted on a rolling basis throughout the year:

- Master of Arts in Teaching (Part-time)
- Master of Science for Teachers
- Master of Science in Computer Science
- Master of Science in Electrical Engineering
- Master of Science in Mechanical Engineering
- Master of Science in Engineering & Management Systems
- Masters of Business Administration
- Masters of Business Administration in Healthcare Management
- Masters of Science in Clinical Leadership
- Joint MBA programs with Albany Law School

• Joint MBA/MS programs with Albany College of Pharmacy
• Certificate Programs *(Exception: Current MBA students interested in a certificate must submit a completed certificate program application, along with the $60 application fee, prior to the first week of the winter term of the year of expected graduation)*

March 1st Recommended Filing Date:
• Master of Arts for Teaching (Full-time only)

June 1st Recommended Filing Date:
• MS Bioethics

Union College Combined Degree – Required to file application by 10th term (fall Senior Year)*:
• BS-BA/MAT (as early as 8th term)
• BS/MS School of Engineering/Computer Science with Union College (as early as end of sophomore year)
• Accelerated BS-BA/MBA (as early as end of sophomore year)

*Separate applications and admission decisions to each school are required.

Applying for MBA during/after completion of one of the Management Certificate Programs:

Students enrolled in a Certificate Program may apply to the MBA or MBA in Healthcare Management program during or after completion of the certificate program. The Graduate Management Admission test (GMAT) is required. If the student is accepted into an MBA program, up to four of the certificate courses taken may be transferable to the MBA program.

Applying for a Management Certificate program while in one of the MBA Programs:

Students already in the MBA program who are interested in a certificate must complete the certificate program application, along with the $60 application fee within the first week of the winter term of the year of expected graduation.

For MBA students wishing to get a certificate, up to four applicable courses from the MBA program can be used for the certificate. This means two additional courses beyond the requirements for the MBA degree will be required for a certificate.

ADMISSIONS OFFICE HOURS

REGULAR OFFICE HOURS:

Mon-Fri 8:00-4:30 (closed 1-2 for lunch)
Wed Evenings - Open until 6:30 during Fall, Winter, Spring terms

EXTENDED OFFICE HOURS:
Please visit each term's course listings for additional extended hours.

APPLICATION MATERIALS REQUIRED

1. Application first page
2. Application fee of $60*
3. All official college transcripts (Bioethics requires highest degree only)
4. Three letters of recommendation (MAT requires two of the letters be academic)**
5. Testing (see testing section below in this section)
6. Essay (see program application for essay instructions)
7. Resume - current
8. Interviews (required for the MAT and MST programs and strongly recommended for all other programs)
9. International students require a full course-by-course grade/degree evaluation completed by a recognized professional evaluator, such as World Education Services (WES).

After a completed application is received, applicants are notified within 4 weeks of a decision.

Once submitted, all application materials become the property of Union Graduate College and are not returnable.

*The application fee is waived for Union College students and alumni, and applicants to the Engineering and Computer Science programs through the Engineering Consortium (BPMI, KAPL, General Electric, Benet Labs and Plug Power).

**Albany Law School JD/MBA applicants are not required to submit recommendations, however the UGC Admissions Committee reserves the right to request them if additional information is needed to make an admissions decision.

Application first page: This is available on line (www.uniongraduatecollege.edu) or from the Office of Admissions – (518) 388-6642. The form may also be filed on line (see the "Admissions/Application Forms" section at www.uniongraduatecollege.edu). Bioethics students to go: www.bioethics.union.edu.

Application Fee: $60 for all degree-seeking applicants. Union College students/alumni and those applying to the Engineering and Computer Science programs through the Engineering Consortium (BPMI, KAPL, General Electric, Benet Labs and Plug Power) may waive the application fee. Non-degree students are not required to pay an application fee.

School Transcripts: The Bioethics program requires the official transcript from the highest degree earned. All other programs require official college transcripts from all

institutions from which college credit has been earned (even if such credits have been transferred into another institution/degree).

Recommendations: Three recommendations are required for all programs. The MAT program requires that two of them be academic faculty familiar with the student's academic ability. The preferred format is UGC's official form available on the web or at admissions offices. A letter of recommendation, not utilizing form, may be accepted in some cases.

Entrance Exams: The MBA programs require the GMAT (see more information below). The Bioethics, MS Degrees in Clinical Leadership, and MAT programs may request a standardized test if the applicant is below a 3.0 GPA. All other programs do not require entrance exams.

Essay: Required by all programs. Instructions for required essays can be found on the back of the specific program application.

Resume: Submission of a current resume is required for all degree programs and certificates.

Interviews: Required by the MAT and MST program and recommended for all other programs.

Additional MAT Applicant Requirements
Applicants to the MAT program must have completed the equivalent of at least 30 semester hours in the liberal arts major area (English, foreign language, mathematics, science, social sciences) in which they seek certification.

International Applicants
The TOEFL or IELTS is required for all programs unless the applicant has studied in an English-speaking university for a minimum of two years. The Admissions Committee may request a telephone interview. It is recommended that international applicants currently studying or living outside the United States who require an I-20 or DS-2019 submit their applications five months prior to the first term they plan to start their studies. A complete course-by-course Grade/Degree Evaluation of all transcripts must be completed by a recognized professional evaluator, such as World Education Services (WES) prior to admission.

ADVISORY SERVICES

Questions regarding admission to graduate programs should be directed to the Office of Graduate Admissions and Registrar. Faculty members are available by appointment and during posted office hours each term. All students must consult with their academic advisor before enrolling in courses. A list of advisors can be found in the Program/Advisor section of the catalog.

COMBINED UNION COLLEGE AND UNION GRADUATE COLLEGE DEGREE PROGRAMS

Union College undergraduate students with an excellent academic record may apply for a combined degree program with the Masters in Computer Science, Masters in Electrical Engineering, Masters in Mechanical Engineering, Masters of Arts in Teaching, Masters in Business Administration, or the MBA in Healthcare Management programs.

A cumulative average of 3.0 in undergraduate course work is expected (3.25 for MAT program). Acceptance into the program enables students to apply up to three graduate college courses for credit (depending on the major) in fulfillment of both undergraduate Union College and Union Graduate College graduate degree requirements. MAT students may apply between the beginning of their eighth term and the end of their senior year. All other program applicants are encouraged to apply their sophomore year and must apply for graduate admission no later than the end of the fall term of their senior year at Union College. Students are required to notify both Registrars that they are in a joint program.

COURSE LOAD STATUS: FULL/PART TIME

The Computer Science, Masters of Science for Teachers, Engineering and Management Administration, Electrical Engineering, Mechanical Engineering, MBA, MBA in Healthcare Administration and MS Clinical Leadership in Health Management programs can all be completed either full-time or part-time. The Bioethics program is a part-time on-line program with a short on-campus component. The MAT full-time program is a one-year program, which begins in June.

The classification of a full-time student is based on a course load of two or more courses per term, with a minimum of six courses during the Fall, Winter, and Spring terms. In general, full-time students take three courses per term.

Full-time students in the MS and MA programs take three to four academic terms to complete and the MBA programs take up to two years to complete, depending upon previous coursework that may apply to waivers and/or transfer credit. Part-time students must complete program requirements within six years from the date of matriculation.

DEFERMENT

Students may request a deferment of their admission for one year. The request is required in writing to the Director of Admissions/Registrar and the Dean of the school you have applied to. Extensions beyond the one year deferment must be submitted in writing to the appropriate admissions committee through the Director of Admissions.

FINANCIAL AID APPLICATIONS

A Free Application for Federal Student Aid (FAFSA) is required for students applying for financial aid (see www.FAFSA.ed.gov). Applicants should contact the Financial Aid office at Union Graduate College at (518) 388-8744. Specific program scholarships are listed in this catalog in the Financial Aid Section. Work study is also available to graduate students – applications are available in the graduate admissions or financial aid office. Students may also contact the Admissions and Registrar's office for updates.

IMMUNIZATIONS

All full-time (>1.5 course/term on-site) students are required to submit immunization records prior to the start of classes (not prior to formal admission). Part-time students are not required to submit the immunization records but, in accordance with New York State requirements, records will be required if a student chooses to take more than 1.5 course at any time. This form is available on our web site and in the admission's office.

INTENT TO ENROLL/RESOURCE FEE

All programs require a response form and a $250 Resource Fee to secure a place in the class. Once enrolled, the non-refundable fee is applied to the student's account. The fee covers guest speakers and lecturers for all programs, lab support, student government, student activities, all graduation fees and regalia, diploma, and unlimited free transcripts.

LEAVE OF ABSENCE

If a student wishes to take a leave from a program they are required to discuss this with their academic advisor or Dean. A letter requesting the leave then is submitted to the Registrar and the Dean of their school indicating the time required. Please be sure to notify the Financial Aid office also and verify any dates that may affect deferments.

NON-MATRICULATED STATUS

All programs allow non-matriculated students. This allows qualified students to start course work while completing the application. Contact the Office of Admission for specific qualifications. Part-time students may enroll in graduate courses as non-matriculated students before admission to a graduate program, provided they satisfy the course prerequisites and have a Bachelor's degree with at least a 2.7 undergraduate grade point average. Applicants with undergraduate GPAs below 2.7 may petition the Admissions Committee to waive the 2.7 requirement for non-matriculated course work. There is a limit of two non-matriculated courses for the MAT. All other programs have a limit of three. Non-matriculated students are required to consult with a graduate program advisor before registration. All non-matriculated students must submit an application for graduate admission, unofficial college transcripts, and an application fee before

registering for their first course. Official transcripts and the remainder of application pieces are required for the admissions decision.

TESTING

The Graduate Management Admissions Test (GMAT) is required for applicants to the MBA programs. Joint applicants from Union College or Siena College for the MBA program may waive the GMAT if their undergraduate grade point average is equal to or higher than a 3.4 cumulative average. For other colleges where we have articulation agreements, the GMAT is not required for students with a cumulative GPA of 3.5 or above. Students with advanced degrees may request consideration for a GMAT waiver by writing to the Director of Admissions. Students not required to take the GMAT may opt to do so for scholarship opportunities.

GMAT Codes:	MBA Full-time	2PK-PN-57
	MBA Part-time	2PK-PN-66
	MBA Health FT	2PK-PN-52
	MBA Health PT	2PK-PN-50

Joint applicants from Albany Law School may waive the GMAT if they submit their LSAT and a college transcript with a calculus grade of "B-" or better (such applicants should have a copy of LSATs and Albany Law School transcripts sent by ALS to Union Graduate College). Albany Law School JD/MBA applicants are not required to submit recommendations, however the UGC Admissions Committee reserves the right to request them if additional information is needed to make an admissions decision.

Joint MS in Clinical Leadership or MBA with Albany College of Pharmacy applicants must submit the GMAT, MCAT or PCAT for admissions. ACP students with a 3.2 GPA may waive the GMAT.

The GRE may be requested by the MAT program in specific instances.

The Bioethics admissions committee may also request a standardized test.

All other programs do not require entrance exams.

TRANSFER CREDIT/COURSE WAIVERS

With the approval of the program advisor and/or transfer review committee, graduate work completed on a satisfactory level (minimum grade of "B-") at other institutions may be counted toward a Graduate College degree if it contributes to the completion of degree requirements. Credits transfer in, but grades do not. Engineering, Computer Science and MAT programs may allow up to two transfer courses. Bioethics students may transfer up to three qualified courses. Transfer credits must come from courses not used for another degree and are within five years old.

School of Management:

Course Waivers and Transfers:

Relevant course work previously taken at either the undergraduate or graduate level may be used to reduce the number of courses required to complete the MBA Management and MBA Health programs. These reductions can come in the form of either course waivers or course transfers. The combined number of course reductions through waivers and transfers may not exceed eight for an MBA student. All course waivers and course transfers must be approved by the Transfer and Waiver Review Committee. This committee conducts a review of each student's transcript and the student is notified at the time of admission of pre-approved waivers and transfers based on this review. Students who want to request a further review should contact the Director of Admissions and Registrar. The request should be made in writing and accompanied (at minimum) with a copy of the transcript showing relevant courses. Students are encouraged to attach catalog descriptions, course syllabi, and any other materials that may aid in the decision. The request should be consistent with the waiver and transfer policies described below. All requests must be submitted by the end of the first term (fall, winter, or spring) during which the student takes a course as a matriculated student.

Course Waivers:

Course waivers may be granted for most core courses. Core courses are specific courses required to complete the MBA degree. Previous course work to be used for course waivers may have been done at the undergraduate or graduate level and may have been used to earn another degree. Generally, two undergraduate courses or one graduate course corresponding to a core course are required to waive that core course. A grade of B- or better must have been obtained in a course for it to be considered to waive a core course.

Course Transfers:

Course transfers refer to graduate courses only that have been previously taken that do not correspond to a specific core course. Courses that qualify will be transferred in as advanced electives. They do not have to correspond to a specific advanced elective in the MBA program as long as they are deemed relevant to the MBA degree by the Transfer and Waiver Review Committee. Courses considered for transfer may not have been used to earn a previous degree. A grade of B- or better must have been obtained in a course for it to be considered for transfer.

Matriculated students are notified at time of admission of pre-approved waivers and transfers. Students who want to appeal this decision and request a further review should contact the Director of Admissions and Registrar or their academic advisor. Course outlines and descriptions to complete these reviews may be required.

Master of Science in Clinical Leadership

See program descriptions under "Bioethics and Clinical Leadership

REGISTRATION INFORMATION

WHEN TO REGISTER

Students may register:

- in person in Lamont House
- by mail (UGC/807 Union St./Schenectady, NY, 12308)
- scan and email (to willisj@uniongraduatecollege.edu and sheehanr@uniongraduatecollege.edu)
- fax to 518-388-6686

An on-line registration is in development and should be available during 2009. Registration times are listed in the College Calendar section of this catalog, on the course listings each term and on the web site. Registrations will be accepted through the last day of each registration period. A non-refundable $100 tuition deposit must be submitted with all registrations, unless you have been pre-approved for loans that cover your entire tuition.

HOW TO REGISTER

1. Secure registration forms and course listings:
   - Call (518) 388-6148
   - www.uniongraduatecollege.edu
   - Visit Lamont House Room 102

2. First Course Taken Requirements – non-matriculated*:
   - 1st page of application and fee
   - Unofficial college transcript
   - Registration form with advisor approval and $100 deposit (applied to tuition)
   - Immunization form (if in more than 1.5 courses on-site)

   Returning students*
   - Registration form with advisor's signature (all programs other than School of Management) or a required study plan filed (SOM).
   - Deposit of $100

   *If non-matriculated student (prior to formal admission) note there is a limit of 2 non-matriculated courses for School of Education. All other programs have a limit of 3 non-matriculated courses.

3. Submission of Paperwork:
   - Mail to Graduate Registrar, Union Graduate College, 807 Union St., Schenectady, New York, 12308.
   - Fax to: 518-388-6686 (if paying by credit card OR pre-approved loans covering entire tuition)

- Deliver to Lamont House Room 102
- Scan and email to BOTH willisj@uniongraduatecollege.edu and sheehanr@uniongraduatecollege.edu (if paying by credit card OR pre-approved loans covering entire tuition).

4. Receipt of registration:
   - Students are given or mailed a receipt of the registration, and this is your first bill if there is a balance due.
   - Your ID number will appear at the top.
   - If you do not receive a copy by end of registration period – please call (518) 388-6148.

   Note:
   - Some classes have restricted enrollment – please register early.
   - The college retains the right to cancel a course if enrollment is insufficient. The students are notified via email.

5. Payment:
   Payment in full is due the first week of the term unless (registration receipt is first bill):
   - You are receiving loans and have completed paperwork for pre-approved loans.
   - Receiving pre-approved company billing

   Late fees will be assessed after this period.

LATE REGISTRATION FEE

Additional fee will be assessed to late registrations (first time registrants are exempt):

- A non-refundable late registration fee of $75 to all registrations of current students received after posted registration period.

ADD/DROP

If you have already submitted a registration form for a specific term and want to make changes – please use the add/drop form available in Lamont 102, call (518) 388-6148, or download the Course add/drop form from the UGC website www.uniongraduatecollege.edu . Withdrawing or dropping a course may result in penalties – see "Withdrawal Fees".

AUDITING OF COURSES

Students may audit courses for one-half the tuition charged for a credit course. Auditors must have appropriate course prerequisites and obtain written permission from the instructor. Laboratory courses and independent studies are not open to auditors. Audit

status is indicated by a "Z" on the student's transcript and is not calculated in the student's cumulative average.

Students who wish to change from credit to audit may do so by notifying the Office of Admissions and Registration in writing prior to the end of the sixth week of classes. No tuition refunds are available for changes from credit to audit.

IMMUNIZATIONS

All full-time (>1.5 course/term on-site) students are required to submit immunization records prior to the start of classes. Part-time students <2 course per term on-site) are not required to submit the immunization records, but records will be required if a student chooses to take more than 1.5 courses on-site at any time.

Proof of immunization must be submitted to the Admissions/Registrar's Office prior to registration for all full-time students or part-time students taking two or more courses. A form is available for this purpose from the Office of Graduate Admissions and Registrar, or downloadable from the web site. Students may also provide a physician's written statement as proof of immunization but such documentation must provide all required information and be attached to our form.

Students whose religious beliefs prohibit immunization, or for whom immunizations pose a health risk, will be required to submit documentation in support of their request for a waiver. Questions concerning immunization requirements should be directed to the Union College Health Services Office at (518) 388-6120.

NON-DEGREE STUDENTS

Students who are not planning to work toward a degree must submit the first page of the application, unofficial college transcripts, an immunization form (if taking more than one course per term), and $100 non-refundable tuition deposit (balance is due week 1 of the term). Applicants must have a bachelor's degree with a cumulative grade point average of 2.7 or better. They are required to register during the posted registration periods (listed in the College Calendar section of this catalog) to avoid any penalty.

COSTS

FINANCIAL INFORMATION

Application Fee $60 (Non-refundable)

The application fee is required of all degree-seeking or certificate applicants, with the following exceptions: Union College students/alumni and students employed as part of the Engineering Consortium (BPMI, KAPL, General Electric, Benet Labs and Plug Power). There is no application fee for non-degree students.

Tuition (per course):

- School of Education $1,950
- School of Engineering/Computer Science $2,500
- School of Management $2,440
- Center for Bioethics $2,485

There is an additional charge for the LIM MBA degree over the undergraduate comprehensive fee that is paid. Students pay for the six additional courses they take at Union Graduate College at the graduate tuition rate in effect in the student's spring term of senior year of undergraduate study and the summer after their senior year.

Tuition payment is Due first week of class:

Full tuition payments and fees are due at the Office of Graduate Admissions and Registrar by the first week of classes. Students who pay after that will be charged a late payment fee of $75.00. Tuition for graduate courses is listed above. A schedule of fees for withdrawal from courses is listed in this section. The $100 tuition deposit is non-refundable. The receipt of the registration is your first bill.

Please note: If you are taking a course outside your major, the cost is determined by your degree designation, not the course.

All tuition and fees must be paid in full. A student will be placed on delinquent status if they maintain an unpaid tuition and fee balance. Delinquent accounts will be forwarded to the college's collection agency and then to the attorney for collection. Students will receive written notification in advance of any action. The student will be responsible for any and all collection costs, attorney fees, accrued interest, etc. that result from the collection of his/her delinquent tuition and fees.

To withdraw from a course, a student must submit a drop form to the Office of Graduate Admissions and Registrar and contact the professor. See "Refund Policy" below. Students may withdraw from a course up until the end of the sixth week of classes. Withdrawal after the sixth week will appear as an "F" on the student transcript. Any student who stops attending a course without written notification to the Office of Graduate Admission and Registrar will also receive an "F" and be charged the entire

course amount. Please note: Students will not be permitted to withdraw if there is an outstanding balance on their bill.

Books and Supplies
Books and supplies will be approximately $750 per academic year.

Living Expenses
Students are required to secure their own off-campus housing. The estimated cost of housing is from $300 to $500 per month depending on an individual's personal choice. The Financial Aid limit for living expenses (regionally) is $16,290 annually.

Student Health Insurance
Office of Graduate Admissions and Registration, Lamont House (518) 388-6148
All full-time students are required to have health insurance. Students who wish to enroll and students who wish to waive due to a current policy must submit a decision form at https://www.gallagherkoster.com. Be sure to choose Union Graduate College. If you are having difficulties, please call us at 518-388-6642. The cost for 2008-09 academic year is approximately $800.

Other Living Expenses
These costs may include, but are not limited to, costs related to the use of a vehicle, travel, and personal living expenditures. The estimated cost is $3,500 annually.

Senior Citizens
Persons over 65 are eligible for a tuition waiver for one course per year on a space-available basis, and with the permission of the instructor.

Alumni
Union Graduate College alumni from the School of Management or the School of Engineering and Computer Science may return to take two additional courses at a reduced rate of 50% of the current cost of attendance. These courses cannot be used toward another degree or certificate, but would serve as an opportunity for alumni to expand their knowledge base within their field of study.

REGISTRATION FEES
Tuition Deposit* $100 (non-refundable)(applied toward tuition)
A tuition deposit that is applied towards the student's tuition must accompany all registrations, unless your entire tuition is paid with pre-approved loans, or you have company billing (employer pays at the beginning of term). The deposit must be paid before a registration will be processed. The deposit is non-refundable unless the College must cancel all courses for which a student has registered. The total deposit is $100 regardless of the number of courses and is applied toward tuition for that term.

*Three-term courses for the School of Management require an additional $200 deposit in the fall term, with the balance of that course fee due by the first week of the spring term.

Late Registration Fee:

Additional fee will be assessed to late registrations (first time registrants are exempt):

- A non-refundable late registration fee of $75 to all registrations of current students received after posted registration period.

Late Tuition Payment:

Tuition is due by the first week of classes.

- All students paying after this will be assessed a late tuition payment fee of $75 which is non-refundable.

OTHER FEES

Resource Fee/Intent to Enroll: $250

After accepting an offer of admission all students are required to pay the $250 resource fee and return a response form to the Registrar's office to secure a place in the class. The fee covers guest speakers and lecturers for all programs, lab support, student government, student activities, all graduation fees and regalia, diploma, and unlimited free transcripts.

General Financial Obligations

Diploma and transcripts will be withheld from a student who has not met all financial obligations to the College. Failure to satisfy all financial obligations will result in the account being sent to an agency for collection; the student will be responsible for all collection costs, attorney fees, accrues interest, etc. that results from the collection of his/her delinquent tuition and fees.

Fee for Checks Returned To the College: $35

Status Continuation: $100

Graduate students who are degree candidates and are working on their thesis must pay a continuation fee for any term in which they are not formally enrolled in one of the required research and thesis courses. The summer term is not applicable.

Other Fees:

Master's Thesis*	$0
Diploma Fee*	$0
Graduation Regalia*	$0
Transcripts*	$0
Parking Decal (annual)	$15
ID Cards	$0

Replacement ID Cards $25
Diploma Replacement Fee $50

- Included in Resource Fee

TUITION WAIVER POLICY

Students with tuition waivers must pay all fees other than course tuition. When registering be sure to indicate that you are using waivers toward tuition costs.

MASTERCARD AND VISA

Tuition and fees may be charged on MasterCard and/or Visa accounts. The authorization section of the registration form must be completed and signed.

COMPANY BILLING

Some companies and government agencies pay their employees' tuition directly to the College. If your tuition will be paid in this manner, please supply authorizing forms or letters from your employer which must include your company's contact person and information. If your employer intends to pay 100 percent of your tuition at the start of the term, your tuition deposit will be waived.

COMPANY REIMBURSEMENT

Some companies and government agencies pay their employees' tuition once grades are received. If your tuition will be paid in this manner, you will be responsible to pay tuition in full the first term you register. For subsequent, consecutive terms, providing the same numbers of classes are taken, you may register with a tuition deposit of $100 with the balance to be paid by the end of the third week of the term. Please note: If payment is not received in our office by the fourth week of the current term, whether reimbursement has been received or not, a late payment fee of $75 will be assessed.

REFUND POLICY

Refunds are based on the date of the student's add/drop (required form), complete termination, or official course withdrawal as noted in the "Schedule of Refunds." Furthermore, refunds are based on the official starting date of the term, not on the student's actual class attendance.

Add/Drop (first two weeks of a term – <u>form required</u>)

Students may change sections or courses of equal credit without financial penalty. Adding new courses may incur additional tuition liability according to the tuition schedule. Students may add courses the first two weeks of a term (or 1st week during summer), with an advisor's approval and no additional late fee. Dropped courses are subject to financial obligations as listed in the withdrawal section.

Official Course Withdrawal (form required)

If a student officially withdraws from all of his/her courses before completing at least 60% of the term, his/her financial aid will be recalculated based on the student's

withdraw date. The student's recalculated aid will be based on the percentage of time he/she completed in the term. The percentage of financial aid eligibility will be directly related to the percentage of the term completed. For example, if a student completed 10% of the term, he/she will be eligible for 10% of his/her financial aid. If he/she completes 30% of the term, he/she will be eligible for 30% of his/her financial aid.

Unofficial Withdrawals

If a student does not formally withdraw from all of his/her courses but stops attending courses before completing 60% of the term, the student is considered unofficially withdrawn from the college and his/her financial aid will be recalculated under Return of Title IV Aid regulations. In the case of an unofficial withdrawal, the effective date of withdrawal will be the midpoint of the term.

Complete Termination

Students who drop all registered courses through the last day of the add/drop period (for dates see each terms course listing) they will be eligible to receive the appropriate refund percentage as noted below. If a student is withdrawing from a program a letter to the Registrar and Dean of their school is required.

Schedule of Refunds

Requests prior to the start of the term or prior to the second class meeting (after 1st) – refund is 100% of tuition and fees minus the $100 deposit.

Requests prior to the third class meeting (after 2nd) – refund is 75% of the tuition and lab fees.

Requests prior to the fourth class meeting (after 3rd) – refund is 50% of the tuition and lab fees.

After these periods there is no refund.

Exceptions

Students who withdraw to enter military service or have a military change of assignment prior to the end of the term are eligible for a 100% refund of the tuition and refundable fees for courses not completed. Documentation of such military services must be provided from the appropriate military official.

Course Cancellation:

If the College should elect to cancel a course due to enrollment limits or based on other circumstances, the tuition deposit will be refunded in full.

Note: Students earn their financial aid by attending classes.

Federal Regulations require Union Graduate College to recalculate a student's financial aid eligibility if the student withdraws from or stops attending his/her class before completing at least 60% of the term. If a student stops attending classes after the college's

refund policy period, the student is liable for all his/her tuition and fees, even if the financial aid eligibility is reduced under the Return of Title IV Aid recalculation.

FINANCIAL AID

The Office of Financial Aid of Union Graduate College is located in Lamont House (305B). It is responsible for financial aid services to the students of Union Graduate College. Questions concerning eligibility for state and federal programs should be directed to the Associate Director at (518) 388-8744. Students may qualify for one or more of the programs listed below. The Office of Graduate Admissions and Registration has a Financial Assistant who will process loan disbursements.

TYPES OF FINANCIAL AID

Federal Subsidized Stafford Loans

This is a need-based loan available to matriculated graduate students who are United States citizens or permanent residents who demonstrate financial need. Students may borrow up to $8,500 per year, if they qualify. The maximum aggregate Federal subsidized and unsubsidized loan limit is $138,000, including undergraduate loans.

Loans carry a fixed interest rate of 6.8%, which is deferred until six months after completion of studies or a drop in enrollment below half time. Students have up to ten years to repay. Eligibility is determined by completing a Free Application for Federal Student Aid (FAFSA – www.fafsa.ed.gov),graduate financial aid supplement form, and submitting federal tax returns and other supporting documentation to the Financial Aid Office of Union Graduate College. Allow twelve weeks from start of the application process to receipt of the loan disbursement.

Federal Unsubsidized Stafford Loans

This loan is non-need based and available to qualifying matriculated graduate students are eligible. The maximum Federal subsidized and unsubsidized loan limit is $138,000 including undergraduate loans.

Note: If the loan originally covers a term in which you do not enroll at least half time, a portion of the amount received must be returned to the bank. Students who withdraw from Union Graduate College must visit the Financial Aid Office for exit information regarding their loan. Upon graduation, this information session is required.

Graduate Federal Plus Loans

A federal loan which, historically, was only available to parents is now expanded to include graduate students. It is based on a credit check and is fixed at 8.5%. Please contact the Financial Aid office for more information.

Supplemental Loan Programs

Available to students attending Union Graduate College on a full or part-time basis. Loan approval is based on a review of credit worthiness and ability to repay. Loans are funded through private lenders and financial institutions such as Citibank, Sallie Mae,

and Sallie Mae-MBA, and Bank of America. Applications are available on-line at each lenders website.

Refund Disbursements

Once refunds have been posted to the student account and applied to tuition, any remaining funds left will be disbursed in a check to the student. These will be the first day after the end of the add/drop period.

Federal Work Study

Students who are interested should secure a form from the admissions office and submit to the financial aid office as early as possible. Student(s) must demonstrate financial need per federal regulations in order to qualify for federal work study. All positions are filled on a first come, first served basis. Students will typically work 10 hours/week for the terms they are approved for.

Tuition Assistance Program (TAP)

Full-time matriculated graduate students who are residents of New York may apply for TAP. Eligibility is based on New York State net taxable income. Graduate students may receive up to $550 per year. In order to receive TAP, you must file a FAFSA application and complete a TAPAP@ www.hesc.com.

Veterans Administration Educational Benefits

Students who are eligible to receive educational benefits under the various chapters administered by the V.A. may obtain more information by contacting the Office of Graduate Admissions and Registration at (518) 388-6295.

Entitlement will vary depending on the education program.

Students claiming veterans' benefits are required to submit written monthly statements attesting to the fact that they are attending class. The following statement must be submitted in person or by mail before the fifth of every month to the Office of Graduate Admissions and Registration, Attn: Veterans' Benefits:

"I, the undersigned attest that I have regularly attended the classes for those courses in which I am currently enrolled."

Any veteran not forwarding this statement along with their signature, will be decertified, resulting in the termination of benefits.

Students pay tuition and fees upon registering and subsequently receive benefit checks from the V.A. on a timely basis.

Scholarships and Fellowships

Below is a listing of available scholarships through Union Graduate College. Students interested in these should contact the specific programs for requirements, updates, and availability.

ALL PROGRAMS - Athletic Assistant Scholarship

Scholarships are offered through the Athletic Director of Union College for up to one academic year. There are generally two scholarships per year available which carry 9 tuition waivers each. Resumes and application are forwarded to Joanne Little in the Athletic Department. They are reviewed annually. All fees are still required.

School of Education Scholarships/Fellowships

A limited number of program fellowships or fee remission scholarships are available from the program. Other students who qualify based on financial need may receive some assistance in the form of tuition reduction through the graduate program. Application forms for graduate MAT assistantships are available from the School of Education office or at our website.

The Harriet and Roscoe L. Williams '30 Endowed Scholarship

In memory of Harriet and Roscoe L. Williams, whose lives of dedication and service enriched schools and communities in the Dutchess County, Adirondack and Capital District regions of New York State. The Williams family supports scholarship assistance to highly qualified MAT graduate students preparing for careers in classroom teaching and educational administration in New York.

Computer Lab Assistantship

Tuition waivers are awarded to a qualified student to work in the Graduate Computer Lab in Lamont House.

School of Engineering and Computer Science Scholarships/Fellowships

A limited number of one-year and/or partial year tuition scholarships are available for qualified full-time students. A limited number of stipends are also available. Most scholarships and/or stipends are associated with department assistantships or completion of a master's thesis as part of the qualified applicants plan of study to complete his/her degree program. Applications are available from the admissions office or at our website.

School of Management Scholarships/Fellowships

Full Time Students Merit Based Awards

Full-time MBA students are automatically considered for scholarships and need not fill out a separate scholarship form. As long as funds are available, scholarships are awarded through August. Criteria used is entering GPA and GMAT total score. Students who were not required to take the GMAT for admission may elect to take the GMAT in order to qualify for scholarships. If taking the GMAT after receiving official admission communication – notify the admissions office that you are submitting scores to be considered for scholarship review.

Joint Union College/Union Graduate College accelerated BS/BA/MBA students who wish to qualify for merit scholarships must take the GMAT regardless of their grade point average at Union College. This scholarship cannot be awarded until the student has completed Union College requirements.

Many of the MBA Scholarship Awards are supported by alumni and donors. Recipients of these endowed scholarships will be notified.

Part-time MBA Students
Students pursuing the MBA on a part-time basis will be considered for merit scholarships based on that portion of their tuition that is not reimbursable by an employer. Tuition waivers will be awarded through August as long as funds are available. Students interested in being considered for part-time financial aid must inform the Director of Graduate Admissions at (518) 388-6238. Students are required to submit a copy of their employer's tuition benefits policy with a letter requesting consideration to the Director of Admissions.

International Students
International students will be considered for merit-based scholarships on an individual basis.

German Federation Exchange Program
Two full nine-course load scholarships are awarded in conjunction with the German Federation Exchange Program.

Center for Bioethics Scholarships:

Directors Scholarship:
The Admission's Committee evaluates each full time applicant for merit scholarship based on prior academic performance. Merit scholarships are distributed in the form of course tuition waivers and are awarded as long as funds are available.

Mount Sinai School of Medicine Scholarship:
Faculty, Staff & Students of Mount Sinai School of Medicine and affiliated institutions are eligible to apply for the MSSM Scholarship. This covers up to 1/3 of the tuition for all Bioethics courses.

Bioethics Elective Discounts:
Bioethic students who elect to take more electives than are required for their program are eligible to take them for a 50% reduction in tuition.

POLICIES AFFECTING FINANCIAL AID ELIGIBILITY

Return of Title IV Aid

Under the Higher Education Amendments of 1998, Federal student aid (PELL, SWOG, and Direct loans) must be calculated for the students who withdraw from or stop attending all of their courses before completing at least 60% of the term. This calculation is required under the Return of Title IV Aid regulation. Class attendance is monitored throughout the term.

Official Withdrawals

If a student officially withdraws from all of his/her courses before completing at least 60% of the term, his/her financial aid will be recalculated based on the student's withdraw date. The student's recalculated aid will be based on the percentage of time he/she completed in the term. The percentage of financial aid eligibility will be directly related to the percentage of the term completed. For example, if a student completed 10% of the term, he/she will be eligible for 10% of his/her financial aid. If he/she completes 30% of the term, he/she will be eligible for 30% of his/her financial aid.

Unofficial Withdrawals

If a student does not formally withdraw from all of his/her courses but stops attending courses before completing 60% of the term, the student is considered unofficially withdrawn from the college and his/her financial aid will be recalculated under Return of Title IV Aid regulations. In the case of an unofficial withdrawal, the effective date of withdrawal will be the midpoint of the term.

TUITION LIABILITY

If a student officially or unofficially withdraws after the end of the college's refund period, the student is liable for all of his/her tuition and fees, even if the student's financial aid is decreased. If the student's financial aid previously covered his/her bill, but no longer covers it after the Return of Title IV Aid calculation, the student will be expected to pay his/her outstanding tuition and fees. Further, if the student receives a disbursement of financial aid, and the Return of Title IV Aid calculation shows the student was not entitled to the funds, the student will be billed for the funds, and the overpayment information will be forwarded to the U.S. Department of Education.

It will be the student's responsibility to repay the funds before he/she is eligible to receive any further federal student aid, even if the student attends another college. This overpayment will appear on the student aid report until the overpayment is repaid.

ACADEMIC REQUIREMENTS

Union Graduate College has adopted the Union College trimester system, approved by the New York State Department of Education in 1966. Under this system, each course equates to 3 1/3 semester hours. A full-course load is considered two (2) courses per term or six (6) courses per year. It is expected that students will spend from 2.5 to 3.0 hours outside of class for each hour spent in class.

GRADING POLICIES AND PROCEDURES

Course Numbering System

Union Graduate College uses a course numbering system with two levels. Courses numbered below 500 are prerequisite courses for which no credit is given. Courses numbered 500-699 are graduate level courses.

Academic credit is computed using a system which counts the number of course units completed. Most courses are for full credit (1 course unit) which is equivalent to 3 1/3 semester credit hours or five quarter hours. All courses listed in this catalog are full credit courses unless designated otherwise.

Grading

Grades are awarded according to the following system:

A	4.0	B+	3.3	C+	2.3
A-	3.7	B	3.0	C	2.0
		B-	2.7	F	0.0

A student who receives a grade of "F" (see "Dismissal" section) may petition the Academic Committee for approval to repeat the course. If permission is granted, both the "F" and the new grade appear on the transcript and are included in the cumulative index. Please refer to the Academic Standing paragraph of this section below.

All grades are mailed to students and are not released over the phone or via email.

Incompletes

Incomplete grades will only be assigned in extenuating circumstances. A grade of incomplete may be requested before the submission of grades, but only on the grounds of circumstances beyond the control of the student.

1. The incomplete request must include the student's signature, the instructor's signature, and the signed approval of the Dean or Director of the program. The form must be submitted to the Office of Graduate Admissions and Registration.
2. All work must be completed at the end of the following term and a grade turned in to the Office of Graduate Admissions and Registrar.

3. For cases in which it is not possible to complete the work within the deadline because of circumstances beyond the control of the student, a petition for an extension of incomplete may be submitted in writing to the Academic Committee through the Registrar's office.

Withdrawal from a Course

1. With the advisor's signature, and with proper notice (Add/Drop form) to the Office of Graduate Admissions and Registrar a student may withdraw from a course (i.e. with a grade of W) at any time in the first six (6) weeks of a term (or first three during summer). A withdrawal/drop made during the add/drop period will not show on a transcript. (In accordance with federal immigration regulations, international students F-1 and J-1 visa holders, must consult their Foreign Student Advisor/Designated School Official, as well as their academic advisor for approval to withdraw from a course). All students are also responsible to notify the professor of the course.
2. Dropping a course after the sixth (6th) week date will result in a grade of "F", unless the advisor and the Dean of the graduate school of which the student is a member, agree that there are extraordinary personal circumstances that justify altering this procedure.
3. If proper notice of withdrawal from a course is not given to the Office of Graduate Admissions and Registrar, a grade of "F" will be posted to the record.

Please note: Students will not be permitted to withdraw if there is an outstanding balance on their bill, and they will receive an "F" for the course.

Pass/Fail Grades

If a graduate thesis, internship, or project is two-part, the first part is graded with a pass/fail grade. A grade of "Pass" will not be calculated in the cumulative index; a grade of "Fail" however, will count as a failing grade. After completion of the second part, a final grade is assigned. These are the only classes a pass/fail option is available for.

Faculty Initiated Grade Changes

Grades are assessments, as fair and objective as possible, of the student's work at the end of the term. Fairness demands that all students be held to the same reasonable standards. All instructors are expected to make fair and careful appraisal of each student's work, and to submit grades to the Office of Graduate Admissions and Registrar no later than the due date specified by that office for the final exam period.

Grades, once submitted, come within the protective domain of the College. Grade changes (other than clerical error) must be made in writing to and approved by the Dean/Director of the program and the Academic Committee. The Dean/Director will present the request to the Academic Committee.

A faculty member must request in writing to change a grade for substantive reasons. This request must be approved by the Dean/Director of the program and the Academic Committee. The Dean/Director will present the request to the Academic Committee.

The Academic Committee will not accept a request without a full explanation supported with detail. Faculty may not allow a student to submit late or additional work in order to improve the grade, unless an official grade of incomplete has been assigned.

Student Grade Appeal

The Academic Committee will grant a grade change appeal by a student only under extraordinary circumstances, namely when it can be demonstrated that the grade was inequitably awarded.

1. A student wishing to appeal a grade in a course should do so no later than the end of the second week of the subsequent term.
2. The student should first confer with the faculty member who assigned the grade (if this faculty member is not available then the student should meet directly with the Dean of that program). The student should inform the instructor of concerns and seek to fully understand the grounds and procedures the instructor has used in determining the grade. The aim of this conference is to attempt to reach a mutual understanding about the grade and the process by which it was assigned.
3. If upon meeting with the faculty member as outlined above, the matter is not resolved within 2 weeks, the student may make a formal written complaint to the Dean/Director.
4. If the issue is not yet resolved within a second two (2)-week period, the matter may be forwarded to the Academic Committee.
    a. If upon review, the Dean/Director finds sufficient grounds of an inequitable award of the grade to warrant an official hearing, the Dean/Director will consult the Academic Committee.
    b. The Academic Committee will consider the student's letter of appeal, and any other relevant materials provided by the Dean/Director, and make a determination regarding the appeal. In no case will Academic Committee substitute its judgment on the merits of a student's work for the bona fide judgment of a faculty member. The decision of the Academic Committee is final.

Repeat Policy

Students who repeat a course they have previously failed will have both grades listed on the transcript. All credits attempted and total quality points earned will be used in calculating the cumulative grade point average. Students who repeat a course they have previously passed (with a grade of "C" or better) will have both grades listed on the transcript, but neither the quality points associated with the second grade nor the credits attempted or earned will be factored into their GPA.

ACADEMIC STANDING

Good Academic Standing

Union Graduate College regards a student as "in good standing" academically if he or she satisfies two conditions: (1) satisfactory progress toward the degree and (2) maintenance of a minimum GPA of 3.0.

Satisfactory Progress for Full-Time Students

Satisfactory progress means a sufficient accumulation of course credits toward a degree. In order to achieve the minimum satisfactory academic progress, students must complete six (6) courses per academic year. Students failing to achieve these academic year standards may be placed on academic warning and forfeit their access to Federal Student Aid Funds until minimum standards are met. These minimum standards are in addition to the minimum GPA standards described below. The New York Tuition Assistance Program (TAP) has stricter requirements.

Satisfactory Progress for Part-Time Students

Satisfactory progress means a sufficient accumulation of course credits toward the degree. In order to achieve the minimum satisfactory academic progress, students must complete their degree within six (6) years of matriculation. These minimum standards are in addition to the minimum GPA standards described below. The New York Tuition Assistance Program (TAP) has stricter requirements.

Minimum GPA Standards

A cumulative GPA of at least 3.0 is necessary for graduation. Students with a cumulative or term GPA below 3.0 will be sent an academic warning letter. The student must raise his/her grade average to "B" to petition for graduation. Failure to do so will lead to placement on academic probation and possible termination of graduate status.

While students are studying at the Graduate College towards their degree, a grade of "F" in one course or a grade of "C" or "C+" in two (2) graduate level School of Engineering/Computer Science, Bioethics/Clinical Leadership or School of Education courses or three (3) School of Management MBA program courses may indicate that the student is not of graduate caliber and will be dismissed from their program. For students in a School of Management Certificate program, two grades of C or C+ (or one grade of F) or Students in a Bioethics Certificate program with one grade of C, C+ or F will result in dismissal from the program. Matriculated students may petition for readmission, in writing to the Dean/Director of their program. The Dean/Director will refer the request to the Academic committee. Please note that a grade of B- is considered substandard performance for a graduate level course.

A student placed on academic warning due to the non-attainment of minimum cumulative GPA standards but permitted to remain at the College, as an enrolled student shall be considered in "good standing" where questions of eligibility for Federal Student Aid Funds are concerned.

The Dean/Directors may review the status of any student in their program whose cumulative GPA or other considerations suggest questions of satisfactory progress toward graduation. If, after such a review, the student's record is deemed unacceptable by the Dean/Director, they may adopt one of the following actions with the approval of the Academic Committee:

Academic Warning: The student may remain in college, but unless the record improves, the student will be subject to subsequent action.

Suspension: When, in the judgment of the Dean/Director, a student's record makes it inadvisable to continue in college, he or she may be suspended, normally for not less than two terms.

Dismissal: In certain cases, the Dean/Director may dismiss a student.

The Dean/Director needs to notify the Registrar in writing of these decisions including the reasons for the decision within three (3) business days of the decision. The Registrar will then notify the student in writing by certified mail within three (3) business days of receiving the decision to the student's mailing address.

Appeals of decisions of the Dean/Director should be directed to the Academic Committee in writing within two (2) weeks of receiving the decision. The decision of the Academic Committee will be given in writing to the student in person or by mail to the student's mailing address no later than five (5) business days after the decision is rendered. The decision of the Academic Committee is final.

The Academic Committee

The Academic Committee (AC) is responsible for recommending and applying graduate policy for the admission and academic performance of students. The Committee consists of nine voting members: the Dean and one faculty member from the School of Management; the Dean and one faculty member from the School of Education; the Dean and one at-large teaching faculty representative from any one of the schools; one student member, the Registrar, and the Vice President of Enrollment are voting members. A vote of five of the voting members of the Academic Committee shall be necessary to constitute a decision of the Academic Committee.

The AC reviews applications accepted by the graduate college's Admissions Committee on which the Grade Point Average (GPA) falls below the 2.7 minimum requirement, and reviews petitions submitted by students with academic considerations. Students who wish to petition the AC with regard to grades, graduate status, or other matters must follow the procedures as listed in the Student Handbook. The AC is also responsible for conduct hearings and recommendations to the President resulting from the hearings.

GRADUATION REQUIREMENTS

To qualify for a degree a student must:

1. Complete satisfactorily the requirements in the degree program, including the major field examination and/or thesis, or internship as applicable;
2. Attain a minimum cumulative GPA of 3.0 overall.

In addition, a student also must have paid all sums due the Office of Graduate Admissions and Registrar, must have made satisfactory provision for payment of any other financial obligations assumed while in Union Graduate College, and must have returned all books borrowed from the Library.

Students are solely responsible for assuring that the program presented for graduation fulfills all requirements, both in general and in specialized study. The Office of Graduate Admissions and Registrar should be consulted when questions arise about the satisfaction of graduation requirements.

Notice of intent to graduate must be sent to The Office of Graduate Admissions and Registrar no later than December 1 prior to their June graduation.

Waivers of Graduation Requirements

Request for waivers of graduation requirements must be made in writing to the Graduate College Registrar. The registrar will present the request to the Academic Committee for consideration. The ruling of the academic Committee is final. The student will be notified in writing by the registrar of the Academic Committee decision within five (5) business days of the rendering of the decision.

TRANSCRIPTS

Official transcripts from Union Graduate College must be requested in writing with a signature. They cannot be sent to students, but will be mailed to other educational institutions, certification boards, employers and prospective employers. This insures the privacy of the student's academic records. Unofficial transcripts, without the college seal, are available for the student's personal records. A financial hold on a student account will prevent the release of transcripts. There are no fees for transcripts, but if there is a special service required to deliver the transcript the cost is the students/alumnae's responsibility.

DIPLOMAS

Diplomas will not be released to anyone who has a financial obligation or grades of "I" incomplete and "Y" delayed.

Replacement Diplomas

Diplomas that have been lost, damaged or destroyed can be reordered. The replacement diploma will be an original diploma; the Registrar's Office does not maintain duplicate

copies. Processing of replacement diplomas takes approximately 4 – 6 weeks. The fee for a replacement diploma is $50.00 (payable to Union Graduate College), and must accompany the request for replacement.

To order a replacement diploma, print out the Replacement Diploma Order Form found on the college website (www.uniongraduatecollege.edu). Mail completed form, along with fee, to Union Graduate College / Registrar's Office, Room 102 / Lamont House / 807 Union Street / Schenectady, NY 12308.

Notification of Rights under FERPA

The Family Educational Rights and Privacy Act of 1974 (FERPA) affords students certain rights with respect to their education records. They are:

(1) The right to inspect and review your student education records within 45 days of the day Union Graduate College receives a request for access. Students should submit to the Registrar written requests that identify the record(s) they wish to inspect. The Registrar will make arrangements for access and notify the student of the time and place where the records may be inspected. UGC will respond to reasonable requests for explanations and interpretations of the records.

(2) The right to request an amendment of your student education records that you believe are inaccurate, misleading, or otherwise in violation of your privacy rights. FERPA, however, only allows students to challenge and correct "ministerial errors" in their records, not to bring substantive claims regarding the reasons for a particular notation having been made. Students may ask UGC to amend a record that they believe is inaccurate or identify the part of the record they want changed, and specify why it is inaccurate or misleading. If UGC decides not to amend the record as requested by the student, UGC will notify the student of the decision and advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.

(3) The right to consent to disclosures of personally identifiable information contained in your student education records, except to the extent that FERPA authorizes disclosure without consent. One exception which permits disclosure without consent is disclosure to UGC officials with legitimate educational interests. A UGC official is a person employed by UGC in an administrative, supervisory, academic, research, or support staff position, or a person or company with whom UGC has contracted (such as an attorney, auditor, security personnel, collection agent, enrollment/degree verification services, National Student Clearing House, honor societies that UGC participates with, NYS Certification boards and Union College); a person serving on the Board of Trustees of UGC; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another UGC official in performing his or her tasks. A UGC

official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional or job responsibilities.

(4) The right to refuse to permit the designation of any or all of the following categories of personally identifiable information , hereafter "directory information," which is not subject to the above restrictions on disclosure and may be disclosed by the College at its discretion:

a. name and campus e-mail address
b. city, town or village and state or country of residence
c. class, anticipated date of graduation, enrollment status (e.g., undergraduate or graduate; full-time or part-time), major field of study, including the college, division, department, or program in which the student is enrolled
d. participation in officially recognized activities and sports
e. weight and height of members of athletic teams
f. the most recent educational institution attended and previous educational institutions attended and dates of graduation there from
g. honors and awards received, including selection to a Dean's list or honorary organization,
h. photographic, video or electronic images of students taken and maintained by UGC
i. marital status and spouse's name
j. parents names and city, town or village and state or country of their residence

Any student wishing to exercise this right must inform the UGC Registrar in writing, by completing a form available in the Registrar's office, within two weeks of the date you receive this notice, of the categories of personally identifiable information which are not to be designated as directory information with respect to that student.

(5) The right to file a complaint with the U.S. Department of Education concerning alleged failures by UGC to comply with the requirements of FERPA. The name and address of the Office that administers FERPA is:

Family Policy Compliance Office
U.S. Department of Education
600 Independence Avenue, SW
Washington, DC 20202-4605

Gerald H. Katzman, Esq.
General Counsel
Union Graduate College
Direct Dial: (518) 694-7298
Fax: (518) 6945-7341
Email: katzmang@acp.edu

STUDENT CONDUCT AND ACADEMIC HONESTY

A student's first responsibility is academic honesty. The College assumes that students will not resort to plagiarism, theft and mutilation of library books and periodicals, or any other form of academic dishonesty. Any student found guilty of academic dishonesty will be subject to appropriate disciplinary action. Additional information is found in the Graduate Student Handbook, which is available at the www.uniongraduatecollege.edu.

All members of Union Graduate College community are bound together by respect for the individual and the collective rights of others. Any student who violates the safety and security of Union Graduate College community is subject to disciplinary action by the College as outlined in the Student Code of Conduct (See the Graduate Student Handbook). Any member of Union Graduate College community or a guest/visitor may file an incident report against a student and upon review by the Dean/Director of the student's program a decision will be made whether or not to initiate charges.

Allegations of misconduct against a student enrolled in graduate programs must be submitted in writing to the Dean/Director. Responsibility for adjudicating violations and imposing disciplinary actions rests with the Dean/Director according to the procedures stated in the Student Code of Conduct.

Union Graduate College has a central concern for establishing and maintaining a community in which work and learning proceed in a humane and caring atmosphere for all its members. Sexual harassment is a violation of law and will not be tolerated in any form at Union Graduate College.

Sexual harassment, according to the definition developed by National Organization of Women, is any repeated or unwanted verbal or physical sexual advance, sexually explicit derogatory statements, or sexually discriminatory remarks made by someone in the classroom or workplace which is offensive or which causes the recipient discomfort or humiliation, or which interferes with the recipient's education or job performance.

Should students feel they have been the victims of any form of the behavior noted above, they may initiate informal discussion or more formal procedures through the Affirmative Action Advisor. The policy in the Graduate Student Handbook regarding sexual harassment outlines appropriate actions students may take. It is distributed to all new students.

Union Graduate College's policy of nondiscrimination on the basis of age, race, religion, disability, sexual orientation or national origin extends to all areas of College operations including, but not limited to, admissions, student aid, athletics, employment and educational programs.

SCHOOLS AND PROGRAMS

SCHOOL OF EDUCATION

Location: Lamont House
Telephone: (518) 388-6361
Fax: (518) 388-7097

Dean: Patrick F. Allen
Associate Deans and Clinical Faculty: Catherine Snyder
Bruce Tulloch

GENERAL INFORMATION

Degrees Offered

- Master of Arts in Teaching
- Master of Science for Teachers of Mathematics and Science

Certificate of Advanced Study Programs

- Certificate of Advanced Study in National Board Certification and Teacher Leadership
- Certificate of Advanced Study in Mentoring and Teacher Leadership

Extension Program

- Middle Childhood Extension

Professional Development Projects with Schools

- National Board Certification Facilitators Support Groups
- Establishing Effective Mentoring Programs in Schools
- Teaching American History

Articulation Agreements

The School of Education has articulation agreements with Hamilton College and Skidmore College whereby students who have graduated from either of these institutions with a 3.3 GPA or better will be eligible for two course tuition scholarships in the Union Graduate college MAT program.

Mission Statement

The School of Education promotes the art of accomplished teaching and learning. Our graduates know their disciplines and know how to teach their disciplines effectively to a wide range of students. The faculty and students are members of learning communities that promote professional excellence and ethical behavior. Graduates have the ability and skills necessary to lead from the classroom.

DEGREES
The Master of Arts in Teaching (MAT)

The MAT degree is designed for individuals who have completed a baccalaureate degree in a liberal arts discipline and who would like to teach subjects such as English, foreign languages, mathematics, science, social studies, or technology in secondary schools. This program provides the pedagogical course work and experience necessary for New York State initial certification, grades 7-12. It also provides the opportunity to extend and deepen knowledge in the subject area of certification and the Master's degree necessary for professional certification.

MAT Program Requirements

The MAT program requires at least 16 courses: 10-13 in pedagogy and 3-5 in the subject area for which certification is sought. **Prerequisites are PSY-146 (Educational Psychology), one year of a college level foreign language or its equivalent, and EDS 500 A, B, C (two weeks of structured field experiences). Pre-requisites must be completed before a student enrolls in the intensive summer program, not necessarily before the student is accepted into the program.** Core requirements are: EDS 540 (Psychology of Teaching), EDS 540L (Psychology of Teaching Laboratory); one of the EDS 511-516 courses (Curriculum and Methods of Teaching English, languages, mathematics, science, social studies or technology); EDS 541 (Essential Reading Literacy), EDS 544 (Writing in the Content Classroom); EDS 550A (Seminar on Special Needs Populations), 550B (Assessment) and 550C (School Reform). The program requires a one-year teaching internship (EDS 551, 552, 553), Master's research (either a two-term thesis in the discipline (___ 598-99), or a one-term classroom-based project (___ 580), plus three to five electives. Students who plan to complete the course-work over a two- or three-year period may apply at any time in the academic year, but they must apply no later than March 1 of the year in which they intend to enroll in the special intensive summer program.

Admission to the MAT

Applicants to the program must have completed a BS or BA from an accredited institution with the equivalent of at least 30 semester hours (9 courses at Union College) in the liberal arts major area (English, language, mathematics, science, social sciences) in which they will seek certification. A minimum grade point average of 3.0 in undergraduate or previous graduate work is normally expected in this discipline, and overall. An interview, an essay, and at least three references are required, two of which must be academic. Evidence of intellectual achievement, motivation, and aptitude are necessary for admission.

Union College undergraduates are also eligible for a BA/MAT or BS/MAT combined degree program (see below). Students may begin the combined degree program during any term, but must complete the intensive summer program prior to the beginning of their internship. Students expecting to begin the program in the summer must submit

application materials no later than March 1 of the preceding spring. Students who plan to complete the course work and internship over a two- or three-year period may apply at any time in the academic year, but they must apply no later than March 1 of the year in which they intend to enroll in the special, intensive summer program. Interested students must see a program advisor before registering and may register for only two elective courses before matriculation. In addition to the admission requirements above, students are expected, before the special summer program, to have completed: 1) an undergraduate educational psychology course or the equivalent competency examination, and 2) two weeks of structured field experiences as defined in School of Education Program literature. All students must complete one year of a foreign language at the college level or its equivalent before the college can recommend certification.

The Teaching Internship

Most MAT candidates will complete a half-day, year-long internship in a secondary school, taking full responsibility for at least two classes. Students will be interviewed at the site(s) where they expect to intern. Entrance into the internship portion of the program is contingent upon completion of Psychology of Teaching and the appropriate Curriculum and Methods course with minimum grades of "B."

Master's Research and Thesis

The thesis generally comprises two of the 3-5 courses in the discipline. For students attempting to complete the program in one calendar year, the thesis is generally undertaken in the fall and winter terms. The thesis advisor is normally a faculty member in an academic discipline directly related to the student's area of certification. The thesis and all the required paperwork must be on file in the Registrar's Office two weeks prior to graduation.

The MAT Project

In lieu of a thesis, students may enroll in ___ 580, which involves carrying out classroom-based research in pedagogy as it relates to an academic discipline. Students who write an MAT Project normally undertake it during the winter term with School of Education faculty. Opting to complete a project usually means enrolling in one more elective course in the discipline than those who undertake an MAT thesis.

Computer Literacy

Each student in the MAT program is expected to leave the program with a greater degree of computer/technology literacy than the degree of literacy with which s/he entered. Students who enter with less than basic computer knowledge are expected to include as an elective at least one of the following: CST 565, 570 or 571, or demonstrate competence in one of those areas.

Elective Course Work

Students in the MAT program are normally required to take at least three elective courses in their academic discipline selected with the approval of their advisor. If the student chooses to undertake an MAT Project in lieu of an MAT Thesis, then the student must select an additional elective for a total of four graduate electives related to the area of

certification. Courses are offered in the late afternoons and evenings during the academic year. With the approval of an advisor, up to two graduate-level courses may be transferred into the MAT.

Post-Graduate Teaching CORE

For some individuals already holding an advanced degree in a discipline related to their prospective teaching area, it may be unnecessary to complete the entire MAT degree program in order to qualify for professional certification. Selected students will be accepted into the Post-Graduate Degree Teaching CORE. The CORE consists of 9 graduate courses in pedagogy including a year-long internship (counting for 3 of the 9 courses). A full-time, eight-week summer term is required. Students who complete only the CORE are not normally recommended for certification by the School of Education program. Each CORE student must apply for certification on her/his own. That means each CORE students must meet the letter of New York State certification standards as defined by the Office of Teaching Certification.

BA or BS/MAT Combined Degree Program

Although all Union College undergraduate students who meet the School of Education's entrance requirements are eligible to become MAT students, to be eligible for the combined undergraduate/graduate degree program a student must be a Union undergraduate and must normally have a grade point average of at least 3.25 or above. Students must apply to the program no earlier than their 8th term and no later than the end of their 10th term. Students will complete the usual requirements for the baccalaureate degree, including PSY 146 (Educational Psychology) and the non-credit structured field experiences (EDS 500A and EDS 500B). In the summer prior to their last year (in most cases between the senior year and their graduate year), students will complete the graduate 8-week summer term of EDS 540 (Psychology of Teaching), EDS 540L (Psychology of Teaching Lab), the appropriate Curriculum and Methods course EDS 511-516, and EDS 541 (Essential Reading Literacy). They will take EDS 550A, B, C concurrently with the year-long teaching internship. In addition to the education courses required for certification, combined degree students must enroll in either a two-term thesis in the discipline or a one-term master's degree project. Students who undertake a thesis must enroll in one additional elective; students who undertake a project must enroll in two additional electives. For undergraduate and graduate work, students in the combined degree program will complete a minimum of 50 courses, allowing them to apply two of their courses to both the undergraduate and graduate degrees.

New York State Certification

Those students seeking New York State Certification through Union Graduate College should apply online at http://www.highered.nysed.gov/tcert/teach/index.html (The New York State Education Department, Office of Teaching Initiative's TEACH website). Each student should apply online in June of the year they graduate. Application is for a state-approved program Initial Certification in their area of certification. Transcripts and all necessary verification are submitted and/or matched online. Students must have completed the MAT program, been fingerprinted, completed SAVE and Drug Abuse / Child Abuse training, passed all three of the NYS certification examinations (LAST,

ATS-W, and CST) in order for the program to recommend certification. Payment of $50 is made by credit card online. Instruction in the online application will be provided for graduating students by the MAT faculty. Although each MAT graduate is seeking initial New York State certification, the MAT and the MST provide students with the required master's degree necessary for Professional Certification. A teacher may apply for Professional Certification after s/he has completed two years of full-time teaching and has completed the master's degree necessary for Professional Certification.

Certificates of Advanced Study

Certificate of Advanced Study in Mentoring and Teacher Leadership (16.7 credits)*
Certificate of Advanced Study in National Board Certification and Teacher Leadership (13.3 credits)*

Application Materials required:

- Application form –
- Application fee of $60
- Candidate Statement – see below for specific requirement
- Interview
- Official Transcripts

Admissions Criteria:

- Initial or Professional Certification, or a Permanent Certificate to teach any level from K-12 in any subject
- Three years of teaching experience (**required for the CAS in National Board Certification only)**
- Generally a 3.0 in all previous coursework

How to apply:

- Contact Chris Angley at angleyc@uniongraduatecollege.edu or call 518-388-6361 to schedule a faculty interview and for application packet.
- Submit official transcripts for all previous coursework
- Submit a candidate statement about the rationale for pursuing the Certificate of Advanced Study
- Submit completed application with the $60 application fee

Cost:

- Application fee of $60
- Tuition for one course is $1000

Courses required for the Certificate of Advanced Study in Mentoring and Teacher Leadership *

EDS 621: Mentoring I: Mentoring Interns and Novice Teachers
EDS 622: Mentoring II: Advanced Mentoring
EDS 623: Directing a Mentoring Program
EDS 624: School Law
EDS 625: Teacher Leadership

Courses required for the Certificate of Advanced Study in National Board Certification and Teacher Leadership *

EDS 610: Reflective Teaching Practices:
EDS 611: Learning to Teach to the Highest Standards
EDS 624: School Law
EDS 625: Teacher Leadership

*Courses may be applied toward a Master's degree at Union Graduate College in English, History, English and History, Mathematics, the Sciences, and Technology.

Middle Childhood Extension Program

The Middle Childhood Extension Program authorizes teachers who are certified in Adolescence Education, grades 7-12, to teach in their subject matter in grades 5 and 6. The subject matter areas include biology, chemistry, earth science, English, French, German, Greek, Latin, mathematics, physics, social studies and Spanish.

Application Materials required:

- Application form – non-degree (no fee)
- Interview
- Official Transcripts (If UGC alum – not required)

Application Criteria:

- Professional Certification in Adolescence Education
- Generally a 3.0 in all previous coursework

Cost:

- Tuition for one course is $1000

Required Classes:

- EDS 570: Middle School Students, Structures, and Standards (3.3 credits)
- EDS 571: Middle Adolescence Literacy (3.3 credits)

Job Placement Statistics

Among MAT Graduates looking for jobs:

2002 Graduates

Percent placed by September after graduation—96%

2003 Graduates
Percent placed by September after graduation—88%

2004 Graduates
Percent placed by September after graduation—100%

2005 Graduates
Percent placed by September after graduation—91%

2006 Graduates
Percent placed by September after graduation—96%

2007 Graduates
Percent placed at six months after graduation—95%

Outline of MAT Program

Prerequisites: PSY 146 or equivalent, EDS 500A, EDS 500B (non-credit, two weeks), or equivalent; one year of a college level foreign language or its equivalent.

Summer Session: An eight-week intensive summer session is required of all students immediately prior to their internship comprised of EDS 540, EDS 540L, and EDS 511-516 (depending on major), and EDS 541.

Typical MAT Full-time Program, One Year
Summer: EDS 511-516, EDS 540 (internship), EDS 540L, EDS 541

Fall: EDS 550A, EDS 551 (internship), ___ 598 (Thesis) or EDS 544, Elective

Winter: EDS 550B, EDS 552 (internship), ___ 599 (Thesis) or ___ 580 (MAT Project), Elective

Spring: EDS 550C, EDS 553, EDS 500L, Elective

The Master of Science for Teachers

This graduate program is designed for individuals who already hold provisional or initial certification with the State of New York and wish to gain the Master's degree necessary for permanent certification. The program offers courses in topics of contemporary importance in the life sciences, physical sciences, mathematics, and computer fields. Courses are designed to provide information in specific subject areas and their integration into the classroom. The program enables teachers to enhance their subject matter

competence, to develop further competence in their present teaching assignments, to move from one subject area or teaching level to another, or to meet additional certification requirements. A different selection of courses is offered each academic year.

Program Requirements

The MS for T degree in science or mathematics is awarded for the completion of eleven courses (36.3) credits). Normally, five courses are taken in one of three general subject areas: Life Science (biology, geology, chemistry), the Physical Sciences (chemistry, geology, physics), or the Mathematics/Computer field. Students interested in the degree must consult an academic advisor in planning their program of study and should matriculate no later than the end of their second course. One or two graduate level courses from other institutions may be transferred into the program, as determined by a faculty advisor.

Admission to the Program

Applicants to the program must have completed a BA or a BS from an accredited institution. A minimum grade point average of 3.0 in undergraduate and/or previous graduate work is normally expected. An interview, an essay, and at least three references are required, two of which must be academic. Evidence of intellectual achievement, motivation, and aptitude are necessary for admission. Students may complete the degree on a part-time or full-time basis and may apply at any time during the year.

Master's Research and Thesis

The thesis generally comprises two of the five courses in the discipline area of concentration. The thesis advisor is normally a faculty member in the academic discipline. If a student does not complete a thesis, s/he must complete master's level research by completing a Master's Project.

The MS for Teachers of Mathematics and Science Project

In lieu of a thesis, students may enroll in ___ 580, which involves carrying out classroom-based research in pedagogy as it relates to the discipline of the student's academic concentration. Students who write an MS for Teachers of Mathematics and Science Project normally complete it during the winter term with a School of Education faculty member. Electing to complete a project usually means completing one more required elective in the discipline than those who complete an MS for Teachers thesis.

Elective Course Work

MS for Teachers students are normally required to take five elective courses beyond the six courses required in their discipline area selected with the approval of an advisor. Graduate courses in the subject area of certification and in education-related subjects are offered in the late afternoons and evenings of the academic year. With the approval of an advisor up to two graduate-level elective course may be accepted in transfer.

Computer Literacy

Each student in the MS for Teachers program is expected to leave the program with a greater degree of computer/technology literacy than the degree of literacy with which s/he entered. Students who entered with less than basic computer knowledge are expected to include as an elective at least one of the following: CST 565, 570 or 571, or demonstrate competence in one of those areas.

SCHOOL OF ENGINEERING AND COMPUTER SCIENCE

Location Butterfield Hall, Room 301A
Telephone (518) 388-8068
Fax: (518) 388-6686

Dean of Engineering and Computer Science: Robert J. Kozik

GENERAL INFORMATION

Degrees Offered

- Master of Science in Computer Science
- Master of Science in Electrical Engineering
- Master of Science in Mechanical Engineering
- Master of Science in Engineering and Management Systems

Mission

The School of Engineering and Computer Science focuses on advancing fundamentals and applying the practical professional knowledge required by today's rapidly changing industries. Students gain from a flexible multi-disciplinary approach that emphasizes the latest technology and is designed to meet their career goals. Recent programmatic changes have introduced emerging energy technologies and increased the integration of business skills to meet the evolving technology/business industry needs.

Job Placement

Over 80% of the students are working professionals enhancing and/or broadening their technical background. Full time students are provided job placement services with focus on the Capital Region and the surrounding Tech Valley industries.

DEGREES

Master of Science in Computer Science

The Computer Science program expands the fundamentals and explores advances in computational theory, programming languages, software systems, hardware integration, and information technology.

Program Requirements

Nine courses numbered 500 or higher, are required, including CSc 511. Three of the nine courses must come from CSC 531, 533, 537, 538, 542, 548, 550, 571 and 583. Two of the nine courses must be either a project (CSc 594–595) or a thesis (CSc 596–597). Students who have extensive software experience may petition to take other graduate-level courses instead of the project/thesis requirement. EER530, from the EER

department, may also be used toward the degree. The nine courses must include a course from each of the core areas:

- Computational theory CSc 512, CSc 542
- Programming languages CSc 513, CSc 531, CSc 550
- Software systems CSc 510, CSc 516, CSc 533, CSc 548
- Hardware systems CSc 518, CSc 552, CSc 554, CSc 537

In addition to the nine courses, all candidates are required to participate in the MS Graduate Seminar in Computer Science (CSc 599). This non-credit seminar serves as the capstone experience of the MS in Computer Science degree. It is normally taken in the last year of the candidate's program.

Master of Science in Electrical Engineering

The electrical engineering program explores technologies and related industry opportunities in modern electric machinery, modeling and control of power electronics, telecommunications, optics and image processing, and the continuing evolution of software and networks. Strong emphasis is placed on Power Electronics/Energy Conversion and related technologies.

Program Requirements

A minimum of ten graduate courses and an MS Graduate Project in Electrical Engineering are required. Each student's program should include at least seven electrical engineering courses and up to three electives. Each student should, in conference with the graduate advisor, plan a complete graduate program prior to taking any courses for graduate credit. Students with weak backgrounds may need to take more than ten courses.

Electives should normally be chosen from graduate level courses in electrical engineering, computer science, mechanical engineering, and MBA programs. The advisor must approve every course taken for graduate credit. A thesis could be considered as one or two technical electives.

All candidates not completing a thesis or independent study are required to participate in the MS Graduate Project in Electrical Engineering. This is a non-credit, no-fee project that serves as the culminating experience of the MS in Electrical Engineering degree.

Master of Science in Mechanical Engineering

The Mechanical Engineering program expands graduates' understanding and application of solid mechanics, thermal-fluid systems, materials, and manufacturability to advance career opportunities in power systems, emerging energy technologies, and product design evolution. Students are encouraged to consider MBA electives and several technical courses to integrate business skills to complement technical expertise.

Program Requirements

The MSME requires a total of ten courses. Two of three core courses must be taken by all students: MER 502 (Engineering Analysis) is required by all students and one or both of the following: MER 501 (Transport Phenomena) or MER 500 (Elasticity). Of the remaining eight courses, six must be in the mechanical engineering major. The remaining two courses are selected from engineering (mechanical or electrical), computer science, mathematics, or from the MBA program. Not all courses from these areas are satisfactory selections; therefore all course selections must be approved by the graduate advisor before course registration. Each student must submit a program plan of study (to be approved by the advisor) before completion of the first course taken for graduate credit.

Full-time degree candidates are required to do Research and Thesis for two courses unless otherwise approved. Part-time students can complete the degree by taking ten courses and the MS Graduate Project in Mechanical Engineering noted below. They also have the option of replacing one or two courses with independent research conducted in the form of a Master's Project (one course) or a thesis (two courses) with departmental approval. All students, either part-time or full-time, intending to do Research and Thesis must consult the department for appropriate guidance. Part-time students not completing a Master's Project, thesis, or independent study are required to complete an MS Graduate Project in Mechanical Engineering. This is a non-credit, no-fee project that serves as the culminating experience of the MS in Mechanical Engineering degree.

Master of Science in Engineering and Management Systems

The engineering and computer science professions continue to require the understanding and application of broadening technologies that complement each other in their product, system, or service application. Course offerings from all three disciplines (Electrical Engineering, Mechanical Engineering, Computer Science) may be required to provide a student with their desired technical growth or parallel the direction of their industrial interests. Technical career growth may be additionally enhanced by supplementing strong technical fundamentals with management disciplines such as finance, marketing, operations, or other related business skills. The Master of Science in Engineering and Management Systems provides a balanced degree program of engineering and computer science complimented by courses from the School of Management.

Program Requirements

A minimum of eleven (11) graduate courses are required. Each student's program should include at least 6 courses from the School of Engineering and Computer Science and 5 courses from the School of Management. Each student should, in conference with their graduate advisor, plan a complete graduate program prior to taking any courses for graduate credit. Students with weak backgrounds may need to take more than eleven (11) courses. The student's advisor should approve every course taken for graduate credit toward this degree.

Graduate courses taken from the School of Engineering and Computer Science should be selected from the following:

- Mechanical Engineering - credit bearing Mechanical Engineering courses

- Electrical Engineering - credit bearing Electrical Engineering courses
- Computer Science - credit bearing Computer Science courses of which 1 of 2 or 3, 2 of 4 or 5, or 3 of 6 must come from CSc 531, 533, 537, 538, 542, 548, 550, 571 and 583. If only 1 Computer Science course is taken, it may be any credit-bearing course.

Graduate courses taken from the School of Management should be selected from those credit bearing courses numbered MBA-510 and above unless otherwise approved.

The Master of Science in Engineering and Management Systems Program will not allow graduate work from another institution to be transferred toward completion of this degree program per the existing transfer policy noted elsewhere in this catalog. This program is focused at providing the working professional or new graduate student the opportunity to integrate curriculum from each of the School of Engineering and Computer Science and School of Management disciplines to focus on a career or industry objective. As such, reducing the core engineering and computer science requirements or management requirements by allowing prior transfer courses is not consistent with the objective of the curriculum or the degree. During completion of the degree requirements a candidate may obtain agreement to take a graduate course from another institution and apply it to this degree as part of their approved course selection such as a nano engineering course from SUNY Albany.

MS Degree Requirements in Engineering and Computer Science

MS Program Required?	MS Thesis	MS Project or Independent Study	Core Program Required?	Remaining Program	Capstone Experience
Computer Science Nine courses required	The student must choose from one of the following: **1.** Complete a two-course thesis **2.** Complete a two-course independent programming project **3.** Substitute two courses with faculty approval.		**Yes,** CSc511 as part of nine courses.	The nine courses must include one course from each of these four areas: 1. Computational theory 2. Programming languages 3. Software systems 4. Hardware systems Three courses from the following: CSC531, 533, 537, 538, 542, 548, 550, 571, and 583.	**The MS Graduate Seminar in Computer Science*:** A regularly scheduled seminar in which all candidates participate in a discussion of current topics in Computer Science.
Electrical Engineering	Not required,	Not required,	No	Minimum of seven EE courses	**The MS in Electrical**

Ten courses required	but if the student elects to do a thesis, it counts as one or two technical electives.	but if the student elects to do an independent study, it counts as one technical elective.		and up to three electives.	**Engineering Culminating Experience:** The candidate must choose one of the following: Thesis, Independent Study, Masters Project, or MS Graduate Project* approved by the faculty advisor.
Mechanical Engineering Ten courses required	Required for full-time students. Not required of part-time students but, if selected, thesis counts as two technical electives.	Not required, but if student elects to do independent MS project, it counts as one course.	**Yes**, two core courses: MER 502 (Engineering Analysis), is required MER 501 (Transport Phenomena) and/or MER 500 (Elasticity)	Six ME courses plus two electives.	**The MS in Mechanical Engineering Culminating Experience:** The candidate must complete either a thesis, Independent Study, Masters Project or MS Graduate Project* approved by the faculty advisor.
Engineering and Management Systems Eleven courses required	Not required	Not required	No	Six courses from the School of Engineering and Computer Science Five courses from the School of Management	Not required

*MS Graduate Seminar and MS Graduate Project are no-fee, no-credit course listings.

SCHOOL OF MANAGEMENT

Location	Lamont House
Telephone	(518) 388-6235
Fax	(518) 388-6686
Website	www.uniongraduatecollege.edu
Dean:	Melvin W. Chudzik
Chair, MBA	Melvin W. Chudzik
Chair, MBA Healthcare Management Program	Martin A. Strosberg

GENERAL INFORMATION

Degrees Offered

- Master of Business Administration (MBA)
- Master of Business Administration—Healthcare Management

Mission

To graduate MBAs who bring professional and disciplinary excellence to their work immediately and who assume leadership roles as they advance in their careers—who think analytically, are technologically current, communicate effectively, work well in teams, have the ability to work in cultures other than their own, and are committed to ethical action. To enrich the learning process by maintaining close personal interaction between students and faculty. To hire and support faculty who are active researchers and dedicated to creating a collegial, student-focused learning environment. To enter into mutually beneficial partnerships with the business community.

AACSB—International Accreditation

The School of Management's program is accredited by AACSB–International (Association to Advance Collegiate Schools of Business), the world's leading business school accrediting body. The program is unique in being the smallest of all AACSB–International accredited business programs and one of only 28 accredited programs—along with such institutions as Harvard University, Stanford University, and Dartmouth College—that focus solely on graduate degrees. Fewer than 30 percent of all business programs nationwide are accredited.

Course Waivers and Transfers:

Relevant course work previously taken at either the undergraduate or graduate level may be used to reduce the number of courses required to complete the MBA Management and MBA Health programs. These reductions can come in the form of either course waivers or course transfers. The combined number of course reductions through waivers and transfers may not exceed eight for an MBA student. All course waivers and course transfers must be approved by the Transfer and Waiver Review Committee. This

committee conducts a review of each student's transcript and the student is notified at the time of admission of pre-approved waivers and transfers based on this review. Students who want to request a further review should contact the Director of Admissions and Registrar. The request should be made in writing and accompanied (at minimum) with a copy of the transcript showing relevant courses. Students are encouraged to attach catalog descriptions, course syllabi, and any other materials that may aid in the decision. The request should be consistent with the waiver and transfer policies described below. All requests must be submitted by the end of the first term (fall, winter, or spring) during which the student takes a course as a matriculated student.

Course Waivers:
Course waivers may be granted for most core courses. Core courses are specific courses required to complete the MBA degree. Previous course work to be used for course waivers may have been done at the undergraduate or graduate level and may have been used to earn another degree. Generally, two undergraduate courses or one graduate course corresponding to a core course are required to waive that core course. A grade of B- or better must have been obtained in a course for it to be considered to waive a core course.

Course Transfers:
Course transfers refer to graduate courses only that have been previously taken that do not correspond to a specific core course. Courses that qualify will be transferred in as advanced electives. They do not have to correspond to a specific advanced elective in the MBA program as long as they are deemed relevant to the MBA degree by the Transfer and Waiver Review Committee. Courses considered for transfer may not have been used to earn a previous degree. A grade of B- or better must have been obtained in a course for it to be considered for transfer.

MBA Internships

All full-time MBA students are required to complete a minimum of 400 hours of meaningful employment in a business environment. This also applies to JD/MBA, pharmacy/MBA and the accelerated BA or BS and MBA program students.

The internship is an opportunity for the student to apply theories, concepts and skills learned in the course of the MBA Program. The student will gain an understanding of the administrative elements and day-to-day functioning of an organization while accomplishing assigned tasks. This will strengthen judgment, decisiveness, and team skills. It will also allow the student to assess his/her own potential in the work environment and possible areas needing development to realize a successful career in management.

MBA students register for MBA 683 and Health MBA students register for HCM 683. This is a no cost, no credit course, that appears as pass/fail on students' transcripts. It is required for full-time students to graduate. The internships are coordinated with the Director of Career Development.

At the conclusion of the internship an evaluation is required from the employer and the student before the pass/fail grade will be given. The internship is in addition to the twenty required courses.

Exchange Program – IESEG School of Management, Lille, France

MBA students will have the opportunity to experience international study at the IESEG School of Management in Lille, France (http://www.ieseginternational.com. UGC has entered into an exchange agreement with IESEG whereby UGC MBA students can spend a term or an entire year at IESEG School of Management. Coursework completed at IESEG will transfer to UGC. Students pay tuition to UGC and pay their own living expenses in Lille. This opportunity is available to UGC students who have completed at least one trimester of courses at UGC. UGC will host 2 to 4 IESEG Graduate Management students in Schenectady during the 2008/2009 academic year. UGC is sending a SOM student to Lille fall 2008.

Grade Meaning Guidelines

(A) *Exceptional* performance: Consistently displays original thinking; good organization; capacity to analyze and synthesize; superior grasp of subject matter with sound critical evaluations; evidence of extensive knowledge base.

(A-) Similar to A, but exhibits occasional gaps in knowledge or critical thinking skills.

(B+) Similar to B but, on occasion, displays superior knowledge or critical thinking skills.

(B) *Competent* performance: evidence of grasp of subject matter; some evidence of critical capacity and analytic ability; reasonable understanding of relevant issues; evidence of familiarity with the literature.

(B-) Similar to B, but occasionally fails to exhibit average understanding or thinking skills and occasionally fails to produce minimally acceptable work.

(C+) Similar to C, but with more frequent displays of competent knowledge and thinking skills.

(C) *Unacceptable performance:* Displays a general lack of understanding of the subject matter; frequently fails to develop solutions to simple problems in the material; often produces uninspired work that is faulty and lacking style and rigor. Without compensating higher performance in other classes, such students are generally deemed unfit to graduate.

(F) Lack of competence or willingness to complete work is evident to the point that the student should be immediately declared unfit to graduate.

Requirements for obtaining an MBA after an MS

Students who received one of the School of Management's previously offered MS degrees may obtain an MBA by taking nine additional courses beyond those taken to satisfy their MS degree requirement, assuming that all MS courses fit within the degree requirements of their desired MBA program. In order to count toward the MBA, an MS course must have been completed within the past five years and the students must have received a grade of at least a "B-".

Requirements for obtaining a second MBA

Students who received one of the School of Management's previously offered degrees may take the additional courses to obtain their additional degree, assuming original course work to be waived fits within the new degree requirements. In order to count toward the new MBA, the previous MBA must have been completed within the past five years and the students must have received a grade of at least a "B-".

The requirements for a Health MBA, after having completed an MBA, are the two Health core courses, seven advanced Health courses and three electives not previously taken.

The requirements for an MBA, after having completed a Health MBA, are two MBA core courses and ten advanced non-health MBA courses not previously taken.

Requirements for obtaining an MBA during or after a Certificate Program:

Students enrolled in a Certificate Program may apply to the MBA or MBA in Healthcare Management program during or after completion of the certificate program. The Graduate Management Admission test (GMAT) is required. If the student is accepted into an MBA program, up to four of the certificate courses taken may be transferable to the MBA program.

Requirements for obtaining a Certificate while in one of the MBA Programs:

Students already in the MBA program who are interested in a certificate must complete the certificate program application, along with the $60 application fee within the first week of the winter term of the year of expected graduation. The $60 fee will be assessed for each application processed.

For MBA students wishing to get a certificate, up to four applicable courses from the MBA program can be used for the certificate. This means two additional courses beyond the requirements for the MBA degree will be required for a certificate.

Job Placement Statistics for 2006 and 2007

Among MBA Graduates looking for jobs:

2006 Graduates

Percent placed by time of graduation	88%
Percent placed by three months post graduation	94%
Percent placed by six months post graduation	100%

Among MBA in Healthcare Management Graduates looking for jobs:

2006 Graduates

Percent placed by time of graduation	60%
Percent placed by three months post graduation	80%
Percent placed by six months post graduation	100%

Among MBA and MBA in Healthcare Management Graduates looking for jobs:

2007 Graduates

Percent placed by time of graduation	70%
Percent placed by three months post graduation	89%
Percent placed by six months post graduation	93%

DEGREES

The MBA General Management Program

Chair: Melvin W. Chudzik (518) 388-6447
chudzikm@uniongraduatecollege.edu

Mission

The MBA Management program prepares students for analytical, managerial, and executive-level positions in a variety of enterprises. The design and delivery of the curriculum emphasize broad exposure to core business disciplines; the building of analytical, computer, communication, and human management skills; and the development of an ethical, systems- oriented, cross-functional perspective for decision-making.

AACSB Accreditation

The MBA program is accredited by The Association to Advance Collegiate Schools of Business (AACSB)

Program Requirements

As shown below, the MBA program includes twelve required core courses, and seven advanced courses and the required capstone course. After waivers and transfers, a minimum of twelve courses must be completed in the MBA. For more details, see the waiver policy. One advanced level course must be taken in each of the three required categories. Students must complete at least eight core courses before taking any advanced courses. Students must take all core courses within each category before taking an advanced course in that category. MBA 501, 502 and 506 must be taken before any advanced courses are taken. The capstone course (MBA 681) is typically the last course taken. Full-time students take core courses in their first year and advanced courses in their second year. An internship or relevant business experience is required for the degree. An internship is not considered one of the twenty required courses. By taking additional courses in a given category, students can create their own unique programmatic focus.

Required Core Courses (Twelve)
All students must complete and/or waive the required courses. The course waivers and transfers must not exceed eight courses. Eight core courses including MBA 501, MBA 502, MBA 506 and MBA 510 must be completed before advanced courses can be taken.

MBA 500 Managing Ethically in a Global Environment
MBA 501 Mathematics for Management (1/2)
MBA 502 Introduction to Probability (1/2)
MBA 506 Statistical Models for Management
MBA 510 Financial Accounting
MBA 512 Managerial Accounting and Finance
MBA 517 Advanced Corporate Finance
MBA 520 Principles of Economics
MBA 525 Marketing Management and Strategy
MBA 531 Operations Management
MBA 545 Achieving Business Value from Information Technology
MBA 551 Managing People and Teams in Organizations
MBA 570 Legal Principles of Business

Required Advanced Courses (Seven)
Students must choose at least one in each of the following three areas. Of the course chosen, at least one must be designated as Management Science (*) and at least one designated as Global (**).

Finance/Accounting and Economics

MBA 611	Personal Finance Planning
MBA 619	Investments
MBA 620	Investment Management
MBA 624	Sports Economics
MBA 629	Money, Markets and Banking
MBA 661**	International Finance

Marketing and Operations

MBA 626*	Marketing Research Techniques
MBA 627	Marketing High Technology Products
MBA 628	Consumer Behavior
MBA 632*	Quality Systems Management
MBA 641*	Systems Analysis and Simulation
MBA 642*	Business Analysis Using Information Systems
MBA 665**	International Marketing Management
MBA 682*	Management Science

Management and Human Resources

MBA 635	Project Management
MBA 640**	Integrating eSystems into Global Business
MBA 650	Competing By Design
MBA 652	High Performance Leadership
MBA 654	Labor Relations
MBA 660**	Executive Decision Processes in Global Environments
MBA 662**	International Business
MBA 664	Entrepreneurship
MBA 667	Leaders on Leadership
MBA 675	Foundations of HR Management
MBA 676	Managing Human Resources
MBA 677**	International Human Resource Management

Capstone (One)

All students are required to take the following capstone course.

MBA 681 Strategic Management and Leadership (Capstone)

Internship MBA 683

Internship or relevant business experience is required for the degree. An internship is not considered one of the twenty courses.

Completing the MBA program in twelve months

Students who waive at least four courses may be able to complete the MBA program in one year by starting in the summer term. Four courses can be taken during the summer in two terms and twelve courses can be taken in the three terms during the regular academic year. Students interested in this option must meet with an academic advisor during the previous academic year.

The MBA-Healthcare Management Program

Chair: John W. Huppertz (518) 388-8738
huppertj@union.edu

Mission

The primary purpose of the MBA Program in Healthcare Management is to prepare its graduates for management positions in health service delivery organizations (e.g.

hospitals, managed care organizations, group practice, long-term care) and in related organizations (e.g. consulting, government, corporate benefits). A successfully prepared graduate will be able to obtain an entry-level or mid-level position, competently perform the duties of that position, and advance and grow professionally in a career.

The program serves students with diverse educational backgrounds and work experiences fully supporting and encouraging those with limited or no clinical and managerial experience who matriculate on both a part-time and full-time basis. The program provides its education in an environment that fosters a high level of interaction among and between students and faculty, both in and out of the classroom. Faculty and students value this small-class environment.

Goals

Program graduates will be able to:

1) Understand the organizational setting of health services delivery including the inputs, processes, outcomes and the legal and ethical context.
2) Acquire the interpersonal skills necessary for fulfilling managerial roles including leadership, communication, negotiation, and conflict resolution.
3) Apply analytical and functional skills to solve a range of business problems facing health delivery and health-related organizations.
4) Assist their organizations in effectively responding to changes in the reimbursement and health policy environment.

Overview

The MBA in Healthcare Management prepares graduates for careers as administrators and analysts in health care, governmental, and private sector organizations with strong health care interests. Typical organizations hiring health systems graduates include hospitals, clinics, health maintenance organizations, consulting firms, planning and regulatory agencies, and research firms. The curriculum is designed to help students understand the complexities of the health care system and to manage health and health-related facilities more effectively.

CAHME Accreditation (formerly ACEHSA)

The MBA in Healthcare Management is accredited by the Commission on Accreditation of Healthcare Management Education and AACSB–International. The program has been continuously accredited since 1981 and was most recently re-accredited in 2005. The MBA in Healthcare Management program is one of only 21 programs nationwide dually-accredited by both ACEHSA and AACSB.

Program Requirements

As shown below, the MBA–Healthcare Management program includes ten required core courses and ten advanced courses (seven required; three elective). After waivers and transfers, a minimum of twelve courses must be completed at the School of Management. For more details, see the waiver policy above. Students must complete at least eight of the core courses including HCM500 before taking any advanced course. Students must

take all core courses within each category before taking an advanced course in that category. The capstone course (HCM 681) is typically the last course taken.

Full-time students take core courses in their first year and advanced courses in their second year. An internship or relevant business experience is required for the degree. An internship is not considered one of the twenty courses.

Required Courses (17 Courses)

Finance
MBA–HCM Core Courses: MBA 510, 512
MBA–HCM Advanced Required Course: HCM 617

Economics
MBA–HCM Core Courses: MBA 520
MBA–HCM Advanced Courses: HCM 620

Marketing and Operations
MBA–HCM Core Courses: MBA 531, HCM 526
MBA–HCM Advanced Courses: None

Management Science
MBA–HCM Core Courses: MBA 501/2, 506
MBA–HCM Advanced Required Courses: None

Management
MBA–HCM Core Courses: MBA 500, HCM 501
MBA–HCM Advanced Required Courses: HCM 650

Health Environment
MBA–HCM Core Courses: HCM 500
MBA–HCM Advanced Required Courses: HCM 674, 680

Information Technology
MBA–HCM Advanced Required Courses: HCM645, 646

Capstone
MBA–HCM Core Courses: None
MBA–HCM Advanced Required Courses: HCM 681

Elective Courses (Three)
HCM 656
PHL 574
Any advanced elective offered in the MBA Program

Please note that HCM 500 is a prerequisite for all advanced courses.

Internship HCM 683
Internship or relevant business experience is required for the degree. An internship is not considered one of the twenty courses.

Joint Degree and Other Programs

Accelerated BA or BS and MBA Program

Union College students considering entrance into the accelerated Bachelor's/MBA program should consult with an MBA program advisor and apply for admission during the sophomore, junior, or first term of the senior year. Joint degree students must complete twenty graduate courses, three of which may count toward Bachelor's degree requirements. Graduate courses may not be taken until the junior year and are typically completed during the senior and fifth years.

Four-Year JD/MBA Program

(with Albany Law School)

This program is designed to meet the management development needs of students enrolled at Albany Law School. Students spend their first year in law studies, their second year in management studies, and their third and fourth years in law and management studies. Four designated law courses transfer into the MBA degree. Students are required to complete their MBA the winter term of the year they petition to graduate at ALS.

Joint Pharm D or Pharm BS /MBA in Healthcare Management

(with Albany College of Pharmacy)

This program, in cooperation with the Albany College of Pharmacy, allows Pharm D and/or BS Pharmaceutical Science students to complete an MBA Healthcare Management in an accelerated period of time. The program is designed to give future pharmacists an understanding of the complex business environment in which they will ultimately practice. *For more information, contact sheehanr@uniongraduatecollege.edu*

Leadership in Medicine (LIM) / MBA in Healthcare Management

Students in the Eight-year LIM program jointly offered by Union College, Albany Medical College and Union Graduate College may earn an MBA in Healthcare Management from UGC. Students choosing this option take additional courses while fulfilling all other requirements of the program. The MBA/H degree consists of eight additional courses; six are taken at Union Graduate College during the four years of undergraduate study, and two are taken during the first year at Albany Medical College, and transferred back to UGC to complete the degree requirements. **There is an additional charge for the LIM MBA degree. Students pay for the six additional courses they take at Union Graduate College at the graduate tuition rate in effect in the student's spring term of senior year of undergraduate study and the summer after their senior year.**

For more information on the Leadership in Medicine Program, and the LIM MBA in Healthcare Management see the entry under the Center for Bioethics and Clinical Leadership.

Articulation Agreements

These agreements normally allow students to complete their MBA degrees at Union Graduate College in one additional year after graduation from the undergraduate programs listed below. Qualified students may take courses the summer prior to their senior year. For details, visit www.uniongraduatecollege.edu, or call (518) 388-6642.

The School of Management has established articulation agreements with:

- Alfred University
- Cazenovia College
- Elmira College
- Hartwick College
- Hilbert College
- Keystone, PA
- New England College
- Randolph Macon, VA
- Siena College
- Skidmore College
- Southern Vermont College
- St. Lawrence University
- SUNY Brockport
- SUNY Geneseo
- SUNY Oneonta
- SUNY Potsdam
- Virginia Union University

Certificate Programs

Certificate Programs are designed for professions currently in the field or wanting to enter the field who have an undergraduate degree. The student will take six courses and receive a certificate that is approved by the NYS Education Department. This is intended to prepare the individual for a professional position in the field. The admissions requirements are the same as for the MBA except the GMAT is not required. If the student wishes to expand their management skills they may apply the courses taken in the certificate program toward the MBA.

Certificate in Human Resource Management

The Certificate Program in Human Resource Management will provide the educational background necessary to make informed decisions in management as related to human resource issues. The certificate holder will have the resources for strategic critical thinking necessary to optimize the human resources of an organization.

Certificate in Healthcare Management

The Certificate in Healthcare Management is designed for individuals with an interest in preparing themselves for a management position in the health care industry. The courses will help students to understand the complexities of the health care system and to manage health and health related businesses more effectively.

Certificate in Financial Management
The Certificate in Financial management is geared for individuals who wish to gain an understanding of the accounting and finance thinking to make critical fiscal management decisions.

Certificate in Management and Leadership
The Certificate in Management and Leadership is designed to give entry and middle level managers the core business skills in organizational processes, change management, resource management and leadership. It is focused on assisting managers and executives in enhancing their management and leadership skills in order to positively impact their current organization and provide them career advancement potential.

CENTER FOR BIOETHICS AND CLINICAL LEADERSHIP

Location	Humanities Building, Room 020
Telephone	(518) 388-8045
Fax	(518) 388-8046
E-mail	bioethics@union.edu
Website	www.bioethics.union.edu

Director	Robert Baker
Assistant Director	Ann Nolte

GENERAL INFORMATION

Degrees Offered

- Master of Science in Bioethics
- Master of Science Clinical Leadership in Health Management

DEGREES

Master of Science in Bioethics

This distance and campus-based MS in Bioethics is offered jointly by the Center for Bioethics and Clinical Leadership of Union Graduate College, and Mount Sinai School of Medicine.

The MS in Bioethics provides advanced bioethics and clinical education for doctors, healthcare administrators, lawyers, nurses, pharmacists, philosophers, researchers and students enrolled in professional and graduate degree programs. The hybrid format of short on-campus sessions and distance learning courses has been specially designed to meet the needs of working healthcare professionals.

Mission

Our mission is to provide quality master's level education for professionals who are unable to participate in conventional graduate programs because of the demands of work or obstacles of distance.

Course Waiver Policy

Up to three courses may be waived by the admissions committee. To secure a waiver, the student must complete a "Course Waiver" form and submit all applicable transcripts and other relevant documentation.

Program Requirements

There are twelve required courses in the program: an intensive Summer Seminar in Health and Human Values; four required courses; three practica; a two-course thesis; and two elective courses.

Courses
BIE 500 Proseminar in Health and Human Values (on-site)
BIE 510 Biomedical Ethics
BIE 520 Healthcare Policy
BIE 530 Bioethics and the Law
BIE 545 Reproductive Ethics (Elective)
BIE 555 Research Ethics: Scientific Integrity (Elective)
BIE 565 Empirical Research Methods in Bioethics (Elective)
BIE 590 Clinical Ethics
BIE 610 On-line Practicum
BIE 620 On-site Practicum
BIE 630 Masters Project I
BIE 640 Masters Project II
BIE 650 Capstone (on-site)

The Leadership in Medicine Program

The Leadership in Medicine program is an eight-year program jointly offered by Albany Medical College, Union Graduate College, and Union College.

Upon completion of the program, students will receive:

1. a BS from Union College;
2. an MS in Healthcare Management **OR** an MBA in Healthcare Management from Union Graduate College*; and,
3. an MD from Albany Medical College.

The application process is administered by the Admissions Office of Union College.

Making the Decision to Earn an MS or MBA

In their sophomore year of undergraduate study, LIM students choose which degree they wish to earn (MS or MBA). This decision is conveyed to the LIM Program Coordinator as part of the student's Sophomore Portfolio.

Students who choose the MS option complete their coursework the summer following the senior year of undergraduate study. Course fees are included in the undergraduate fee structure.

Students who choose the MBA option must take additional courses while fulfilling all other requirements of the program. The MBA degree consists of 8 additional courses; six

are taken at Union Graduate College during the four years of undergraduate study, and two are taken during the first year at Albany Medical College, and transferred back to UGC to complete the degree requirements.

There is an additional charge for the MBA degree. Students pay for the six additional courses they take at Union Graduate College at the graduate tuition rate in effect in the student's senior year of undergraduate study and the academic year following senior year.

*The MS Leadership in Medicine-Health Management is outlined below as one of UGC's MS Degrees in Clinical Leadership. The LIM MBA in Healthcare Management follows:

MBA in Healthcare Management (LIM)

The LIM MBA in Healthcare Management requires 20 courses plus an internship, as listed below:

- MBA 506 Statistical Models of Management
- MBA 510 Financial Accounting
- MBA 512 Managerial Accounting and Finance
- MBA 520 Principles of Economics
- MBA 531 Operations Management
- HCM 526 Health Systems Marketing
- HCM 617 Healthcare Finance
- HCM 645 Intro.to Strategic Use of Information Technology (½ Credit)
- HCM 646 Health Information Technology (½ Credit)
- HCM 674 Legal Aspects of Healthcare
- HCM 680 Health Policy and Managerial Epidemiology
- LIM 500 Introduction to Health Systems
- LIM 503 Healthcare Leadership
- LIM 544 Health and Human Values I
- LIM 545 Health and Human Values II
- LIM 553* Economics of Health (*or HCM 620, Health Economics)
- HCM 684 Strategic Issues for Healthcare Organizations (Capstone)
- PHL 574 Biomedical Ethics
- EBHC Evidence-Based Healthcare (at Albany Medical College) #1
- EBHC Evidence-Based Healthcare (at Albany Medical College) #2
- Elective

An approved internship is required for the MBA in Healthcare Management, but is not one of the 20 required courses.

MS Degrees in Clinical Leadership

The Masters in Clinical Leadership degrees are designed for future physicians, clinicians, pharmacists, and other healthcare professionals who wish to better understand the health care industry and the environment in which it exists, or who aspire to clinically-related

leadership roles. The goal of the program is to broaden the horizons of students by providing them with knowledge and skills in bioethics, health policy and health management as well as in the health sciences. Degrees are designed for three populations of students:

1. 8-year Leadership in Medicine students (BS/MS/MD Union/Union Graduate College/Albany Medical College;
2. students who are concurrently completing BS or PharmD degrees at the Albany College of Pharmacy;
3. students not in either of the previous programs who are considering medical or administrative healthcare careers.

Under certain circumstances, MS degrees may be "traded up" to MBA degrees. See section following the specific degrees entitled, "Trading up to the MBA"

MS in Healthcare Management (Leadership in Medicine)

Designed for 8-year Leadership in Medicine students (BS/MS/MD Union/Union Graduate College/Albany Medical College;

The goal of the Leadership in Medicine–Healthcare Management program is to prepare students for the challenge of medical leadership by combining an enriched undergraduate curriculum with graduate education in bioethics, health management, and medicine.

Program Requirements

The MS in Healthcare Management (LIM) requires 12 courses as listed below:

- MBA 510 Financial Accounting
- MBA 512 Managerial Accounting and Finance
- HCM 617 Healthcare Finance
- HCM 674 Legal Aspects of Healthcare
- HCM 684 Strategic Issues for Healthcare Organizations **(**Capstone)
- LIM 500 Introduction to Health Systems
- LIM 503 Healthcare Leadership
- LIM 544 Health and Human Values I
- LIM 545 Health and Human Values II
- LIM 553 Economics of Health
- LIM 571 Clinical Leadership Practicum
- PHL 574 Biomedical Ethics

MS Clinical Leadership in Health Management (ACP BS)

The BS Pharm Sciences and MS Clinical Leadership in Healthcare Management joint program is limited to students from Albany College of Pharmacy (ACP). The program is designed to give ACP students an understanding of the healthcare industry and the environment in which it exists. Students start coursework in the fall of their fourth year at ACP. Students must submit separate applications to Union Graduate College and Albany

College of Pharmacy *(Students interested in the joint MBA Program should refer to the School of Management section of this catalog).*

Up to three courses may be waived for the MS degree; Students who elect to take the additional courses needed beyond the MS to earn the MBA must take the GMAT exam. Students may appeal this policy based upon strong performance in the UGC MS program.

Program Requirements
There are twelve required courses in the program. Students in the Pharmacy BS/MS Clinical Leadership in Health Management Program automatically waive three of these courses (LIM 553, HCM 656, and STA 501), utilizing ACP courses with a B- or better. In addition, UGC coursework may count for ACP electives. See program agreement or contact the Admissions office at 518-388-6148 for specifics.

Courses are listed below:

- HCM 500 Introduction to Health Systems
- HCM 501 Health Systems Management
- LIM 553 Economics of Health
- HCM 571 Clinical Leadership Practicum
- PHL 574 Biomedical Ethics
- MBA 510 Financial Accounting
- MBA 512 Managerial Accounting and Finance
- HCM 617 Healthcare Finance
- HCM 674 Legal Aspects of Healthcare
- HCM 680 Health Policy and Managerial Epidemiology
- HCM 656 Group Practice Management
- STA 501 Intro to Probability and Statistics or an approved Statistics course

MS Clinical Leadership in Health Management (ACP PharmD)
(with Albany College of Pharmacy)
The Pharmacy Doctorate and Master of Science Clinical Leadership in Healthcare Management joint program is limited to students from Albany College of Pharmacy (ACP). The program is designed to give ACP students an understanding of the complex business environment in which they will ultimately practice. The program is typically completed on a part-time basis over three years. Students start coursework in the fall of their third year at ACP. Students must submit separate applications to Union Graduate College and Albany College of Pharmacy *(Students interested in the joint MBA Program should refer to the School of Management section of this catalog).*

Program Requirements
There are twelve required courses in the program. Students in the Pharmacy Doctorate/MS Clinical Leadership in Health Management Program automatically waive three of these courses (MBA 510, HCM 656, and STA 501), utilizing ACP courses with a B- or better. In addition, UGC coursework may count for ACP electives. See program agreement or contact the Admissions office at 518-388-6148 for specifics.

Courses are listed below:

- HCM 500 Introduction to Health Systems
- HCM 501 Health Systems Management
- HCM 620 Health Economics
- HCM 571 Clinical Leadership Practicum
- PHL 574 Biomedical Ethics
- MBA 510 Financial Accounting
- MBA 512 Managerial Accounting and Finance
- HCM 617 Healthcare Finance
- HCM 674 Legal Aspects of Healthcare
- HCM 680 Health Policy and Managerial Epidemiology
- HCM 656 Group Practice Management
- STA 501 Intro to Probability and Statistics or an approved Statistics course

MS Clinical Leadership in Health Management

The Master of Science Clinical Leadership in Health Management stand-alone program is designed for students who are not part of the ACP or LIM programs above, but who wish to better understand the health care industry and the environment in which it exists, or who aspire to clinically-related leadership roles. It provides future physicians, clinicians, pharmacists and other healthcare professionals an understanding of the complex business environment in which they will ultimately practice, and the degree may enhance the academic record of those who plan to attend medical school. The program can be completed in one year full-time or over a three-year period part-time.

Program Requirements

There are twelve required courses:

- LIM 502 Introduction to Health Systems
- HCM 501 Health Systems Management
- LIM 553 Economics of Health
- LIM571 Clinical Leadership Practicum
- PHL 574* Biomedical Ethics (*or BIE 510)
- MBA 510 Financial Accounting
- MBA 512 Managerial Accounting and Finance
- HCM 617 Healthcare Finance
- LIM 674 Legal Aspects of Healthcare
- LIM 670 Health Policy and Managerial Epidemiology
- STA 501 Intro to Probability and Statistics
- Elective an approved elective

MBA after an MS Degree

This may be done within five years of completing the MS degree at UGC. The MBA requires an additional eight courses beyond the MS in Clinical Leadership. This involves returning the MS diploma for the MBA upon meeting the MBA requirements. If a

student does not complete the additional MBA coursework, the MS diploma is not surrendered and the MBA is not awarded.

Students who elect to take the additional courses needed beyond the MS to earn the MBA must take the GMAT exam. Students may appeal this policy based upon strong performance in the UGC MS program.

Up to two courses may be waived for the MS degree; Students who choose to take course work toward the MBA after earning their MS will be considered for additional course waivers based upon undergraduate course work.

A student who has one or two C's in the MS program and wants to earn the MBA may receive credit for these courses toward the MBA, but they will count as C's in consideration of the Academic policy that three C's is grounds for suspension from the program.

Certificate Programs

This Bioethics Certificate Program was designed to respond to the needs expressed by hospital administrators and hospital ethics committees. It was specifically designed for health professionals, lawyers, pharmacists and healthcare administrators seeking advanced training in bioethics.

Two certificates are offered. Each is a four-course program, and may be applied toward the MS in Bioethics. Certificates take approximately one year to complete.

Certificate in Bioethics: Specialization in Health Policy & Law
An on-line distance learning program.

Certificate in Bioethics: Specialization in Clinical Ethics
A hybrid, on-line/on-site program which incorporates an intensive one week on-site practicum and one-week on-site capstone.

Program Requirements
Each certificate program requires four courses.
Specialization in Health Policy & Law

- BIE 520 Healthcare Policy
- BIE 510 Biomedical Ethics
- BIE 530 Bioethics & the Law

Plus one of four electives offered:

- BIE 545 Reproductive Ethics
- BIE 555 Research Ethics
- BIE 565 Empirical Research Methods
- BIE 590 Clinical Ethics (as an elective)

Specialization in Clinical Ethics

- BIE 590 Clinical Ethics (online)

- BIE 610 On-line Clinical Ethics Practicum
- BIE 620 On-site Clinical Ethics Practicum
- BIE 650 Capstone (on-site)

COURSES OF INSTRUCTION

Key to Terminology

*= Advanced MBA or MBA-HSA Course

** = Course descriptions appear in Union College's Catalog

Prerequisite Discussion and Terminology:

"Pre" = Prerequisite. Student must have finished this course prior to beginning the listed course.

"Rec" = Recommended. It is recommended (but not required) that this course be completed prior to the course listed.

If "prerequisites" have not been fulfilled, then written permission forms, signed by the instructor or Dean, must accompany the registration form.

Additional prerequisite requirements may be found within each school / program section.

SCHOOL OF EDUCATION COURSES

The following courses are for students in the MAT or MS for T programs. Enrollment in these courses is by permission of School of Education Deans only.

Specific 2006-07 course offerings are identified below and updated via www.uniongraduatecollege.edu or by contacting the School of Education.

To ensure that students meet appropriate prerequisites for all courses, all graduate students are required to have a plan of study on file that has been approved by School of Education advisors.

PSY 146. Educational Psychology (Pre-1)
Winter, Spring; Rasso
Principles of psychology applied to teaching, with emphasis on cognitive abilities of students, classroom management procedures, and motivational techniques. Visits to a variety of local schools. Prerequisite: PSY 010.

EDS 500A. Field Observations (Middle School)
Fall, Winter, Spring; Allen (No fee)
40 hours, observing classes and meeting with secondary school teachers in the discipline for which certification is sought. Five days are required at the middle school level. Specific observation activities outline the expected outcomes of the experiences as well as information regarding observational techniques and procedures. Typical experiences involve in-depth observation of one teacher and additional observations of other teachers and classes to see a range of grade/ability levels. Observers are asked to consider physical environment, classroom climate, learners and learning styles, the curriculum, and teacher

planning/preparation. Students are also expected to become familiar with instructional materials and resources.

EDS 500 B. Field Observations (High School)
Fall, Winter, Spring; Allen (No fee)
40 hours, observing classes and meeting with secondary school teachers in the discipline for which certification is sought. Five days are required at the high school level. Either 200A or B must be conducted in a high needs school.

EDS 500C. Continuation of EDS 500A and 500B.
Field Observations (Internship School)
Spring; Allen ($250 fee)
40 hours, observing classes and meeting with secondary school teachers in the discipline for which certification is sought. Specific observation activities outline the expected outcomes of the experiences as well as information regarding observational techniques and procedures. Typical experiences involve in-depth observation of one teacher and additional observations of other teachers and classes to see a range of grade/ability levels. Observers are asked to consider physical environment, classroom climate, learners and learning styles, the curriculum, and teacher planning/preparation. Students are also expected to become familiar with instructional materials and resources.

EDS 511. Curriculum and Methods of Teaching English
Summer; Moore
Curricular planning and instruction for the teaching of English at the secondary school level. The course will include an analysis of secondary language arts curricula including New York State Frameworks for language arts, instructional techniques and strategies, designing and locating instructional materials, planning, implementing, and evaluating lessons and units.

EDS 512. Curriculum and Methods in Teaching Mathematics
Summer; McKenna
Curricular planning and instruction for the teaching of mathematics at the secondary school level. The course will include an analysis of classic and current secondary mathematics curricula including New York State Frameworks for mathematics, instructional techniques and strategies, designing and locating instructional materials, planning, implementing, and evaluating lessons and units.

EDS 513. Curriculum and Methods in Teaching Languages
Summer; Martino
Curricular planning and instruction for the teaching of modern and classical languages at the secondary school level. The course will include an analysis of secondary language curricula including New York State Frameworks for languages; instructional techniques; the teaching of speaking, listening, reading, and writing; designing and locating instructional materials; planning, implementing, and evaluating lessons and units.

EDS 514. Curriculum and Methods in Teaching Sciences

Summer; Shiland
Curricular planning and instruction for the teaching of science at the secondary school level. The course will include an analysis of secondary science curricula including New York State Frameworks for sciences; instructional techniques and strategies for teaching scientific concepts; laboratory methods and safety, designing and locating instructional materials; planning, implementing, and evaluating lessons and units.

EDS 515. Curriculum and Methods in Teaching Social Sciences
Summer; Reynolds
Curricular planning and instruction for the teaching of social sciences at the secondary school level. The course will include an analysis of secondary social studies curricula including the New York State Frameworks for social studies; models and techniques for teaching and integrating the various social sciences; designing and locating instructional materials; planning, implementing, and evaluating lessons and units.

EDS 540. Psychology of Teaching
Summer; Allen, O'Connell, Remis, Snyder, Tulloch
Theories of learning and memory applied to instruction; models and research on teaching in secondary schools. This course will include a laboratory component with micro-teaching experiences and will be taken in the summer preceding the teaching internship. (Co-requisite: EDS 240 Lab)

EDS 540L. Microteaching Laboratory
Summer; Eads, Lasselle, Merriman, Sicotte
Students prepare and present several 5-30 minute lessons using a variety of instructional models. Lessons are video-taped and critiqued by peer-coaches and laboratory faculty. This laboratory must be taken concurrently with EDS 240 and a course in Curriculum and Methods in Teaching (EDS 511-516).

EDS 541. Essential Reading Literacy
Summer; OConnell
An examination of the reading approaches, both aesthetic and efferent, covers text features, vocabulary building, and strategies for meaning-making to support students' reading in the academic discipline content areas.

EDS 544. Literacy for the Content Classroom
Fall, Winter; C. Reynolds, Wojcik
The theory and instructional approaches which support students' acquisition of content knowledge through writing. Builds upon the reading essentials of EDS 541 to help teachers use writing processes and varied assignments and strategies for specific content learning objectives, writing to learn as well as display writing, includes instructional planning elements such as types of assignments, writing frequency and pacing, feedback, grading, and reflective analysis of writing products.

EDS 550A. Special Needs Seminar: Drug, Alcohol, Child Abuse
Fall; Hobday, Rasso, O'Connell, Staff

This seminar is required of all MAT candidates and is to be taken concurrently with their internship. This course explores major aspects of special needs populations in schools including State mandates; laws dealing with the handicapped; gifted and talented students; the instruction required for teachers in drug, alcohol, and child abuse; and projects to increase teachers' competence in working with special needs populations. Only students engaged in an internship may enroll in this course.

EDS 550B. Seminar in Instruction and Evaluation
Winter; Snyder, Tulloch, Staff
This seminar is required of all MAT candidates and is to be taken concurrently with their internship. Topics include: application of instructional theory and research, reflective teaching and self-evaluation, traditional and alternate/performance assessments. Each student will produce a professional portfolio and a teaching video-tape in this course. Only students engaged in an internship may enroll in this course.

EDS 550C. Seminar in Instruction and Evaluation
Spring; Snyder, Tulloch, Vrtiak
This seminar is required of all MAT candidates and is to be taken concurrently with their internship. Topics include: application of instructional theory and research, reflective teaching and self-evaluation, exposure to major school reform movements/proposals, and the relationship of new teachers to the reform movement. Only students engaged in an internship may enroll in this course.

EDS 551, 552, 553. Teaching Internship (No Fee)
Fall, Winter, Spring; Allen
Graduate interns teach a minimum of two courses in a local secondary school under the direction of an experienced school mentor and a college supervisor. Students meet several times a trimester on campus in addition to their teaching responsibilities. Only matriculated MAT students may be enrolled in an internship.

___ 580. MAT/MS for Teachers Project
Winter; Kennedy, Morley, Ryan, Vrtiak, Staff
Individual and group projects relating to the classroom teaching of a particular discipline. Typical projects are: systematic applications of an instructional model of a major segment of curriculum in a teaching subject area; classroom action research; addressing curricular or instructional questions/issues within one's teaching subject area.

EDS 590. Independent Study in Education

___ 598. ___ 599. Research and Thesis in the Discipline
Fall, Winter

EDS 600. Status Continuation ($100)
Graduate students who are degree candidates and are working on their thesis must pay a continuation fee for any term in which they are not formally enrolled in any other course counting toward the completion of their degree.

BIO 553. Plant Biology
Spring; Goldman
This course will focus on a survey of the land plant kingdom with an emphasis on phylogeny, anatomy, physiology, field identification, and ecology. Emphasis will be placed on the New York State curriculum for biology in secondary schools and ways to link plant study to the curriculum.

BIO 590. Biological Demonstrations
Fall; D. Williams
Focusing on specific biological laboratories taught in middle schools and high schools, this course not only explores the New York State mandated biological laboratories, but also the potential laboratories that can be taught in the discipline at the secondary school level. The emphasis is on the NYS standards-based skills that secondary students need to know and be able to perform. Each student leaves the course with a wide variety of laboratories that can be used in a wide variety of school settings.

CST 565. Introduction to Computers in the Classroom
Fall; Wilkinson
This core course is required of all students specializing in computers who have not had a similar course in their previous study. It is strongly recommended for all students in any education program who have had little or no exposure and/or knowledge of computers, computer systems, and their basic applications: word processing, databases, and spreadsheets. Emphasis will be placed on what computers do, how they can be used, an understanding of the various parts of the hardware, loading programs, running programs, the primary and secondary storage capabilities and their functions. All students will become familiar with word processing, spreadsheets, databases, and their applications. A basic introduction to E-mail, the Internet, and some of their basic uses in the classroom will also be included along with an elementary explanation of programming through the use of Quick Basic or another introductory programming language.

CST 570. Computers in the Language Arts Classroom
Fall, Winter; Reynolds
Investigates the potential of microcomputer technology to improve reading, writing, study, communication, and second language skills. During the first five weeks, many tools, techniques, and materials will be presented through demonstrations, readings, lectures, and lab sections. Class members will further explore one or more of these areas and develop an implementation plan during the second portion of the course. Students should have an acquaintance with computers but do not need to be programmers. Some Logo or Carol the Robot is helpful.

CST 571. Computers in the Math and Science Classroom
Spring; Wilkinson
Investigates the potential of new technology for improving the teaching of math and science. Special attention is given to the advanced uses of spreadsheet and database software in the secondary curriculum. Course discussions will emphasize the educational

applications of computer technology rather than development of software. Advanced use of E-mail, the Internet and World Wide Web will be taught as well.

EGL 531. Reading Poetry
Spring; Stevenson
Students will examine a broad range of poems in order to examine the sources and characteristics of the unique powers of poetry and poets claimed throughout history. Students will learn to formulate theories of how poetry operates in ways peculiar to itself and to develop personal, aesthetic, and critical approaches to reading poetry effectively.

EGL 581. Criticism
Fall; Danaher
This course focuses on gaining a broad familiarity with the major theoretical approaches to the study of literature and culture. The course will apply the insights gained about theory to the practical act of interpreting literary texts and narratives of various sorts. Strong links will be drawn between theory and practical application.

EGL 582. The Civil War Era
Winter; Allen
Focusing on the history and literature of the Civil War Era, this course selects materials from 1850-1870. Key concepts and their extensions into the 19th and 20th centuries will be emphasized including race, gender, immigration, industrialism, military tactics, individualism, Romanticism, Realism, Naturalism, and Patriotism. The course will emphasize several interdisciplinary approaches to the study of literature and history, including a wide variety of artifacts that can be used to teach the history and literature of the period. The course will be organized as a seminar emphasizing discussion and student presentations.

HST 510. Comparative History
Spring; Sargent
History 510 takes a comparative and topical approach to the study of traditional global history. The goal is to provide teachers with several different framework within which to understand and teach global history. Five main approaches are examined. The course will be organized as a seminar focusing on class discussion rather than lecture. Grading will be based on short papers and a final exam.

HST 558. The Holocaust
Spring; Berk
A formal study of European and American Jewry in the period 1933-1945 focusing on modern anti-Semitism, the Nazi world view, German extermination policies, the response of Europe and the United States, and Jewish behavior in a time of crisis.

HST 582. The Civil War Era
Winter; Allen
Focusing on the history and literature of the Civil War Era, this course selects materials from 1850-1870. Key concepts and their extensions into the 19th and 20th centuries will

be emphasized including race, gender, immigration, industrialism, military tactics, individualism, Romanticism, Realism, Naturalism, and Patriotism. The course will emphasize several interdisciplinary approaches to the study of literature and history, including a wide variety of artifacts that can be used to teach the history and literature of the period. The course will be organized as seminar emphasizing discussion and student presentations.

HST 584. Personality in History
Winter; Berk
This course deals with the impact upon history of a number of prominent personalities. The factors influencing their lives, the roles they played in the historical process and the interplay between their personalities and underlying forces of history constitute the subject matter of this course.

HST 589. Special Topics in Social Science
Fall; Sargent
This course is designed as a critical thinking course, analyzing the ways in which social scientists write, think, make arguments, and present evidence. The course provides future teachers with multiple ways to evaluate social science evidence in multiple disciplines. The course demands analytical thinking and the ability to articulate orally and in writing.

PHY 590. Physics Demonstrations
Fall; Malecki

SCHOOL OF ENGINEERING AND COMPUTER SCIENCE COURSES

Specific 2008-09 course offerings are identified via www.uniongraduatecollege.edu or by contacting the Dean of Engineering.

To ensure that students meet appropriate prerequisites for all courses, all graduate students are required to have a plan of study on file that has been approved by the graduate advisor.

MS IN COMPUTER SCIENCE COURSES

Non-Credit-Bearing Courses

CSc 599. Master of Science Graduate Seminar in Computer Science
This required, non-credit Seminar provides a capstone experience for graduate Computer Science candidates. Candidates select a topic for independent research during the Fall term. The candidate submits a final written report and presents the research during a seminar session the following Winter or Spring term. Each candidate is required to attend all seminar sessions. The candidate receives a pass/fail grade which appears on the official transcript. This is a no-fee course. This course is normally taken during the final year of the candidate's program. Prerequisite: approval of graduate advisor. (no credit)

Credit-Bearing Courses

CSc 510. Operating Systems
Batch, interactive, real-time, and distributed operating systems; multiprogramming, multiprocessing, multiplexing, multitasking; concurrent programming; elementary queuing theory; memory management; resource allocation, sharing and protection. This course is cross-listed in the Union College catalog as an undergraduate course (335). Graduate students will be expected to complete additional course work beyond the undergraduates in this class.

CSc 511. Algorithm Design and Analysis
Fundamental algorithms used in a variety of applications. Includes algorithms on list processing, string processing, geometric algorithms, and graph algorithms. This course is cross-listed in the Union College catalog as an undergraduate course (250). Graduate students will be expected to complete additional course work beyond the undergraduates in this class.

CSc 512. Theory of Computing**
A discussion of the fundamental ideas and models underlying computing—properties of formal languages, finite automata, regular expressions, pushdown automata, context-free

languages, Turing machines, and undecidability. This course is cross-listed in the Union College catalog as an undergraduate course (350). Graduate students will be expected to complete additional course work beyond the undergraduates in this class.

CSc 513. Programming Languages**
An introduction to issues in programming language design and implementation. Major programming language paradigms: functional, logic, and object-oriented, and their use. This course is cross-listed in the Union College catalog as an undergraduate course (370). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisites: CSc 511

CSc 514. Computer Graphics
Algorithms for handling two-dimensional and three-dimensional objects. Interactive graphics hardware and systems. X windows, engineering workstations. This course is cross-listed in the Union College catalog as an undergraduate course (385). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisites: Calculus III: Differential Vector Calculus and Matrix Theory

CSc 515. Introduction to Databases
Introduction to data models and database design. Coverage of network, hierarchical, and relational architectures with emphasis on the latter. Study of relational algebra, entity-relationship modeling, and data normalization. Study of fourth generation query languages including SQL. Introduction to centralized, distributed, federated, and mediated systems. This course is cross-listed in the Union College catalog as an undergraduate course (340). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisite: Data Structures

CSc 516. Software Engineering
Strategies for the specification, design, production, testing, and support of computer programs; software development models; programming team structures; documentation and maintenance. This course is cross-listed in the Union College catalog as an undergraduate course (360). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisite: CSc 511.

CSc 518 Digital Design
(Cross-listed as EER 518)
The design of digital hardware systems at the module level using modern approaches. Datapath and control unit design, hardware description languages, minimization, pipeline. Laboratory exercise and a design project are required. This course is cross-listed in the Union College catalog as an undergraduate course (318). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisite: Introduction to Digital Computers or equivalents.

CSc 529. Neural Networks
(Cross-listed as EER-529)

Topics include the biological basics of artificial neural networks, neuron models and architectures, backpropagation, associative and competitive learning. Weekly computer laboratories and a final project required. This course is cross-listed in the Union College catalog as an undergraduate course (329). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisite: Linear Algebra and Differential Equations.

CSc 531. Computer Language Translators
The modules of a compiler and their functions. Lexical processor, syntax analyzer. Symbol table access methods, scanning arithmetic expressions, error recovery, code generation. Prerequisite: CSc 512.

CSc 533. Advance Topics in Software Engineering
Seminar on topics in software engineering covering selected modern approaches to requirements engineering, software design, and verification of software systems. Prerequisite: CSc 516 or permission of instructor.

CSc 536. Computer Network Protocols
(Cross-listed as EER 536)
Design, analysis, and operation of communication protocols for computer networks; the Internet, TCP/IP, addressing, switching, routing, congestion control, application protocols. This course is cross-listed in the Union College Catalog as an undergraduate course (336). Graduate students will be expected to complete additional course work beyond the undergraduates in the class. Prerequisites: Introduction to Digital Computers or equivalent programming ability.

CSc 537. Comparative Computer Architecture
(Cross-listed as EER 537)
Study of computer architectures, with an emphasis on RISC processors, performance metrics, datapath and control, pipelines, cache design, and parallel instruction execution. Prerequisites: CSc 510.

CSc 538. Advanced Topics in Database Systems
Physical data organization and its application to database management. Study of file layouts, indexing, and query optimization techniques. Advanced database topics will be studied including concurrency control, transaction management, data recovery, and security. Prerequisite: CSc 515.

CSc 542. Analysis and Design of Computer Algorithms
The analysis of time and space requirements of algorithms; the design of efficient algorithms using techniques such as divide and conquer, and dynamic programming; efficient algorithms for graph problems, matrix multiplication, fast Fourier transforms, polynomial multiplication, pattern matching; introduction to complexity theory. Prerequisite: CSc 511.

CSc 544. Artificial Intelligence

Fundamental concepts used in creating "intelligent" computer systems; semantic representation, logical deduction, natural language processing, and game playing; expert systems, knowledge-based systems, and elementary robotics. This course is cross-listed in the Union College Catalog as an undergraduate course (320). Graduate students will be expected to complete additional course work beyond the undergraduates in the class. Prerequisite: CSc 511.

CSc 547. Data Communications and Networks
An introduction to protocols, communication hardware, networks, error detection and handling, and software. This course is cross-listed in the Union College catalog as an undergraduate course (337). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisite: Introduction to Digital Computers or Topics in Computer Logic and Mathematics, or equivalents. A knowledge of statistics is helpful.

CSc 548. Concurrent Programming
Survey of synchronization and communication in concurrent programs; introduction to concurrent programming languages and systems such as Java and MPI; computation in distributed and multi-processor systems. Prerequisite: CSc 511. Recommended: CSc 510.

CSc 550. Advanced Programming Language Topics
Advanced issues in programming languages design; descriptions of syntax and semantics, types, binding time, run-time systems. Projects will include implementations of small programming-language interpreters. Prerequisites: CSc 511 and CSc 513.

CSc 551. Large Scale Software Development
Strategies for the systemic design, implementation, and testing of large software systems. Design notations, tools, and techniques. Design patterns and implementation idioms. Implementation, debugging and testing. Includes team and individual software development projects. This course is cross-listed in the Union College catalog as an undergraduate course (260). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisites: Logic & Set Theory.

CSc 552. Embedded Microcontroller Systems
Architecture, Programming, and Applications
(Cross-listed as EER 552)
Hardware and architecture with emphasis on 8051 microcontrolla; programming in assembly and higher-level languages, microcomputer applications, and interfacing. Design projects required. This course is cross-listed in the Union College catalog as an undergraduate course (352). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisites: Knowledge of computer programming and introduction to Digital Computers or equivalent.

CSc 554. VLSI System Design
(Cross-listed as EER 554)

Design of very large scale integrated systems including structured design, stick diagrams, delay time estimation. Design from logic to physical levels; CAD tools for layout and simulation. Design projects required. This course is cross-listed in the Union College catalog as an undergraduate course (354). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisites: Introduction to Digital Computers and Introduction to Semi-conductor Devices and Circuits or equivalents.

CSc 571. System Modeling & Optimization
(ie Computational Intelligence)
(Cross-listed as EER 571, MER 571)
Topics include the theory, design, and application of biologically and linguistically motivated computational methods emphasizing neural networks, genetic algorithms, fuzzy logic, and hybrid intelligent systems in which these methods are employed. Special emphasis will be placed on applying these techniques to "real-world" problems, and examples from a broad range of industrial applications will be presented. Homework assignments and a final project are required. Prerequisites: undergraduate calculus and linear algebra.

CSc 572. Engineering Statistics
(Cross-listed as EER 572, MER 572)
Modern engineering practice makes extensive use of statistical methods for the efficient collection and analysis of engineering data, and to support data-based decision making. This course will introduce the statistical tools that are of greatest importance for practicing engineers. Core topics to be covered will include probability and distribution theory, the construction and interpretation of statistical intervals, statistical hypothesis testing, regression analysis and empirical modeling, statistical experimental design, and statistical quality/process control. Additional specialized topics may also be covered, depending upon the interests of the class; possible topics include system reliability analysis, measurement system analysis, process capability analysis (and "six-sigma"), accelerated life testing, and acceptance sampling.

CSc 573. Robotics
In development.

CSc 583. Selected Topics in Computer Science
Prerequisite: Permission of the instructor.

CSc 590-593. Independent Study
(by arrangement)
Prerequisite: At least two CSc courses numbered between 530 and 589.

CSc 594-595. Two-Term Programming Project
(by arrangement)
Prerequisite: At least two CSc courses numbered between 530 and 589.

CSc 596-597. Research and Thesis
(by arrangement)
Prerequisite: At least two CSc courses numbered between 530 and 589.

MS IN ELECTRICAL ENGINEERING COURSES

Specific 2008-2009 course offerings are identified via www.uniongraduatecollege.edu or by contacting the Dean of Engineering.

To ensure that students meet appropriate prerequisites for all courses, all graduate students are required to have a plan of study on file that has been approved by the graduate advisor.

Non-Credit-Bearing Courses

EER 599. Master of Science Graduate Project in Electrical Engineering
This non-credit seminar project provides a capstone experience for graduate electrical engineering candidates not completing a thesis or independent study. The candidate and faculty advisor agree on project scope and evaluation process. The candidate receives a pass/fail grade which appears on the official transcript. This is a no-fee course.

Credit-Bearing Courses

EER 502. Advanced Circuit Analysis
General network theory, graph topology. Topological methods applied to loop, node, node-pair, mixed variable, and state equations. Linear, nonreciprocal, and active networks. Prerequisite: Discrete Systems or equivalent.

EER 510. Semiconductor Device Theory
In-depth examination of the physical operation of basic semiconductor devices such as diodes, bipolar transistors, junction and metal-oxide-semiconductor field effect transistors. Determination of internal parameters that contribute to device performance. Prerequisite: Electronic Devices or equivalent or permission of the instructor.

EER 512. Application of Integrated Circuits
Electronic processing of signals; properties of linear and hybrid integrated circuits; design of linear, nonlinear and hybrid electronic systems, active filter networks. Design projects required. This course is cross-listed in the Union College catalog as an undergraduate course (312). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisite: Analysis and Design of Electronic Circuits, Control Systems or equivalents, or permission of instructor.

EER 518. Digital Design

(Cross-listed as CSC 518)
The design of digital hardware systems at the module level using modern approaches. Datapath and control unit design, hardware description languages, minimization, pipeline. Laboratory exercise and a design project are required. This course is cross-listed in the Union College catalog as an undergraduate course (318). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisite: Introduction to Digital Computers or equivalents.

EER 520. State Space Analysis
Formulations of state equations, matrices and determinants. Main concepts of linear algebra. Eigenvalues and Eigenvectors. Solutions of state equations by EV-EVR methods. Prerequisites: Circuits and Systems, Discrete Systems or equivalents.

EER 521. Modern System Theory
Continuation of EER 520. Functions of matrices; Cayley-Hamilton's theory. Time-varying systems, controllability and observability. Nonlinear systems and Lyapunov's stability. Prerequisites: Control Systems, EER 520 or equivalents.

EER 522. Linear Control Systems
This course addresses practical control system design primarily from a classical perspective. Beginning with transfer function modeling of dynamic systems, the course moves through transient, root locus, and frequency response analysis to end with frequency domain techniques for controller design.

EER 524. Random Processes
Review of discrete probability, random processes. Markov chains and Queuing Theory. Applications to communication systems, and computer networks. Prerequisite: Some probability knowledge desirable.

EER 525. Non-Linear Optimization
Extremization of objective functions (cost, performance, etc.) subject to constraints in the form of equalities and inequalities. Method of Lagrangian Multipliers. Kuhn Tucker conditions. Gradient search algorithm. Penalty functions. Direct methods of variational calculus and their application to approximate solutions of problems in electric circuit theory. Economics of electric power networks. Prerequisites: Undergraduate math and linear algebra.

EER 526. Optimal Control Systems
Introduction to the theory and applications of optimal control. Development of Bellman's dynamic programming, variational methods and Pontryagin's maximum principle. Applications to the synthesis of optimal regulators and trackers. Solution of control problems with minimum time, energy or fuel consumption. Prerequisites: Background in control theory and better than average mathematical ability. EER 520 helpful, but not necessary.

EER 528. Digital Control Systems

The course begins with a brief review of continuous-time control methods before transitioning to the theory and implementation techniques for control of dynamic processes by digital computers. Topics covered include discrete system analysis, sampled data systems, quantization effects, state space representation of digital control systems, and the design of digital control algorithms.

EER 529. Neural Networks
(Cross-listed as CSc 529)
Topics include the biological basics of artificial neural networks, neuron models and architectures, backpropagation, associative and competitive learning. Weekly computer laboratories and a final project required. This course is cross-listed in the Union College catalog as an undergraduate course (329). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisite: Linear Algebra and Differential Equations, CSc Pre3 for computer science students.

EER 530. Fuzzy Logic
Topics include fuzzy sets and relations, membership functions, defuzzification, classical logic and fuzzy logic, fuzzy rule-based systems, nonlinear simulation, decision-making, pattern recognition and control systems. This course is cross-listed in the Union College catalog as an undergraduate course (330). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisites: Calculus and Linear Algebra, CSc Pre3 for computer science students.

EER 531. Electronic Devices
Terminal characteristics and theory of electronic devices; band theory, photo and electronic effects, PN junctions; bipolar and field effect transistors, discrete and integrated electronics. This course is cross-listed in the Union College catalog as an undergraduate course (310). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisite: Introduction to Semiconductor Devices and Circuits or equivalent.

EER 533. Wireless Communication Circuits
Communication circuits, including coupling networks, electrical noise, high-frequency amplifiers, mixers, phaselock loops, high efficiency and broadband amplifiers, modulators and demodulators, pulse modulation techniques. Three lab hours each week. Design projects required. This course is cross-listed in the Union College catalog as an undergraduate course (333). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisite: Analog Communications, Analysis and Design of Electronic Circuits or equivalents, or permission of the instructor.

EER 536. Computer Network Protocols
(Cross-listed as CSc 536)
Design, analysis, and operation of communication protocols for computer networks; the Internet, TCP/IP, addressing, switching, routing, congestion control, application protocols. This course is cross-listed in the Union College catalog as an undergraduate

course (336). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisites: Introduction to Digital Computers or equivalent programming ability.

EER 537. Comparative Computer Architecture
(Cross-listed as CSc 537)
Study of computer architectures, with an emphasis on RISC processors, performance metrics, datapath and control, pipelines, cache design, and parallel instruction execution. Prerequisites: Operating Systems and either Introduction to Digital Computers or CSc Pre1 (Topics in Computer Logic and Mathematics) or equivalents.

EER 541. Energy Conversion
Theory of electromechanical energy conversion; characteristics of transformers and DC induction, and synchronous machines. This course is cross-listed in the Union College catalog as an undergraduate course (341). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisite: Electric Circuits or equivalent.

EER 542. Electronic Power Conversion
This course examines the application of power semiconductor devices to the efficient conversion of electrical energy. Circuit analysis, signal analysis, and energy concepts are integrated to develop steady-state and dynamic models of generic power converters. Specific topics include AC/DC conversion, DC/DC conversion, DC/AC conversion, and AC/AC conversion. These generic converters are applied as controlled rectifiers, switching power supplies, motor drives, HVDC transmission, induction heating, and others. Ancillary circuits needed for the proper operation and control of power semiconductor devices are also discussed. Prerequisites: Courses in circuit analysis, signals and systems.

EER 542A. Modeling & Control of Energy Conversion
This course examines modeling and control techniques appropriate for application to power electronic and electric machine systems. The course will involve examination of the appropriate theory, followed by application through examples and small design projects. Simulation will be used to evaluate the merits of various techniques. Prerequisites: EER 242, Power Electronics I; some exposure to state-space models is desirable.

EER 542B. Electromechanical Energy Conversion
This course is designed to introduce the student to the inside of AC electric machinery. It begins with a review of computing inductance using the integral form of Maxwell's equations. Next, the energy method for computing the forces of electrical origin is introduced. These forces are then combined with circuit equations and the equations of mechanics to obtain dynamic models of electromechanical systems. The methodology developed is applied to simple electromechanical structures and then to various types of synchronous machines; induction machines are also considered. Consideration will be

given to the electronic control of electric machines. Prerequisite: an undergraduate course in electromagnetics.

EER 543. Introduction to Antenna Theory
Propagation of electromagnetic waves, antenna parameters, arrays, wire antennas, aperture antennas, receiving antennas. Prerequisite: Introduction to Electromagnetic Engineering I or equivalent. This course is cross-listed in the Union College catalog as an undergraduate course (368). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisites: Introduction to Electromagnetic Engineering or equivalent.

EER 544. Digital Communications
Elements of a digital communication system, digital source coding, error correction, introduction to information theory, channel models, signaling waveforms, optimum reception and detection. Prerequisites: Analog Communications, Probability and Digital Communications or equivalents.

EER 546. Digital Signal Processing
Discrete sequences, sampling, z-transform, discrete and fast-Fourier transforms, discrete filter realizations, filter design based on analog, Butterworth, Chebyshev, Elliptic low pass filters, windowing and quantization effects. Prerequisite: Discrete Systems or equivalent.

EER 547. Data Communications and Networks
(Cross-listed as CSc 547)
An introduction to protocols, communication hardware, networks, error detection and handling, and software. This course is cross-listed in the Union College catalog as an undergraduate course (337). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisite: Introduction to Digital Computers or CSc Pre1 (Topics in Computer Logic and Mathematics), or equivalents. A knowledge of statistics is helpful.

EER 548. Digital Circuits
Special circuitry of digital systems; transistors as switches, logic gate types (RTL, DTL, TPL, ECL, MOS, CMOS, etc.), digital ICs semiconductor memories. Design projects required. This course is cross-listed in the Union College catalog as an undergraduate course (348). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisite: Introduction to Digital Computers, Introduction to Semiconductor Devices and Circuits or equivalents, or permission of the instructor.

EER 552. Embedded Microcontroller Systems
(Cross-listed as CSc 552)
Hardware and architecture with emphasis on 8051 Microcontrollers; programming in assembly and higher-level languages, microcomputer applications, and interfacing. Design projects required. This course is cross-listed in the Union College catalog as an

undergraduate course (352). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisites: Knowledge of computer programming and Introduction to Digital Computers or equivalent.

EER 554. VLSI System Design
(Cross-listed as CSc554)
Design of very large scale integrated systems including structured design, stick diagrams, delay time estimation. Design from logic to physical levels; CAD tools for layout and simulation. Design projects required. This course is cross-listed in the Union College catalog as an undergraduate course (354). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisites: Introduction to Digital Computers and Introduction to Semi-conductor Devices and Circuits or equivalents.

EER 556. Detection, Estimation and Filtering
Decision criteria, estimation of their parameters, Wiener and Kalman filters. Prerequisites: Analog Communications and some knowledge of probability or Probability and Digital Communications, or equivalents.

EER 557. Image Processing
The course covers the basic operations performed on digital images. These include digitization, image enhancement and restoration, color image processing, and image compression using the discrete cosine transform and wavelets. This course is cross-listed in the Union College Catalog as an undergraduate class (347). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisite: Discrete Systems or equivalent.

EER 558. Waves in Communication
This course will cover the basic concepts needed to develop electromagnetic devices in wireless communication. These include transmission line theory and circuits, wave propagation and transmission, elements of guided waves and resonators, and basic antenna concepts. This course is cross listed in the Union College Catalog as an undergraduate class (358). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisite: Intro to Electromagnetic Engineering or equivalent.

EER 560. Power System Analysis I
Power and energy in AC circuits. Single-phase, three-phase and polyphase circuits in balanced and unbalanced regimes. Measurement of three-phase power. Determination of three-phase sequence. Single-line diagrams. Per-unit method of representation and computations. Transformers and synchronous machines in power systems. Parameters of transmission lines. This course is cross-listed in the Union College catalog as an undergraduate course (360). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisite: Electric Circuits or equivalent.

EER 561. Power System Analysis II
Wave-propagation in transmission lines. Analysis of power networks, load-flow solutions and control. Three-phase faults and symmetrical components. Power system protection. Stability of power systems. This course is cross-listed in the Union College catalog as an undergraduate course (361). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisites: Electric Circuits or equivalent.

EER 563. Fundamentals of Wireless Electronics
RF components, transmission line theory, Smith chart, 2-port models, matching networks, RD transitor circuit design. This course is cross-listed in the Union College catalog as an undergraduate course (463). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisite: Introduction to Semiconductor Devises and Circuits or equivalent.

EER 570. Nuclear Engineering
(cross-listed as MER 560)
This course provides a working knowledge of nuclear engineering, reactor physics and reactor plant technologies including an overview of the required basic nuclear physics and mathematical principles. Emphasis will be on the reactor core. Course will culminate with the completion of a core design concept, which will be presented to the instructor and fellow students. Class participation will be highly encouraged.

EER 571. System Modeling & Optimization
(ie Computational Intelligence)
(Cross-listed as CSC 571)
Topics include the theory, design, and application of biologically and linguistically motivated computational methods emphasizing neural networks, genetic algorithms, fuzzy logic, and hybrid intelligent systems in which these methods are employed. Special emphasis will be placed on applying these techniques to "real-world" problems, and examples from a broad range of industrial applications will be presented. Homework assignments and a final project are required. Prerequisites: undergraduate calculus and linear algebra.

EER 572. Engineering Statistics
(Cross-listed as CSc 572, MER 572)
Modern engineering practice makes extensive use of statistical methods for the efficient collection and analysis of engineering data, and to support data-based decision making. This course will introduce the statistical tools that are of greatest importance for practicing engineers. Core topics to be covered will include probability and distribution theory, the construction and interpretation of statistical intervals, statistical hypothesis testing, regression analysis and empirical modeling, statistical experimental design, and statistical quality/process control. Additional specialized topics may also be covered, depending upon the interests of the class; possible topics include system reliability analysis, measurement system analysis, process capability analysis (and "six-sigma"), accelerated life testing, and acceptance sampling.

EER 573. Case Studies in Failure and Ethics in Engineering
(Cross-listed as MER 573)
This course provides a broad look at engineering failure and ethics in engineering. It will focus on engineering failure case studies and the principles of applied engineering ethics. To understand engineering disasters and to learn from these failures. To prepare engineers for the decisions they may face in their professional careers. Focus is on mechanical engineering.

EER 574. Solid State Electronics
Course reviews the physics and technology of semiconductor electronic devices and their dynamic behavior. Emphasis will be placed on semiconductor devices used in high-power and high frequency applications such as power electronic switching elements and microwave power amplifiers. Course emphasizes physical understanding of device operation and limitations through energy band diagrams, electron carrier statistics and transport, charge control equations, and equivalent circuit models. Derivation of electrical characteristics and dynamic limitations will be presented for (1) power diodes, (2) bipolar devices such as the power bipolar junction transistor and thyristors, (3) unipolar devices such as the microwave field effect devices and (4) new classes of controlled power electronic devices such as the insulated gate bipolar transistor. Issues such as reduction of parasitic electrical losses, high bandgap semiconductor material development, and thermal management will be discussed.

EER 576. Motor Acoustics
(Cross-listed as MER 576)
Development of the fundamental principles and equations for motor noise and vibration. Focus on development of analytical methods for predicting the acoustic performance of motors, along with an overview of numerical methods. Develop an understanding of the key principles and governing equations of motor acoustics. This covers noise generation by the motor, its structural dynamics response, and its sound radiation. Apply those equations to the analytical prediction of the noise sources and acoustic responses of motors. Understand the bounds of applicability of the analytical formulas, and the numerical methods which are available to predict the response of complex motors.

EER 580. Fuel Cell Technology
(Cross-listed as MER 580)
Survey course is to introduce fuel cell technology. The emphasis will be on the electrochemistry, the polymer materials science of PEM systems, and the various methods of generating power directly from a fuel and an oxidant. The course will cover the science and engineering aspects of fuel cells. The system effects of the stack will be introduced so as to provide a complete picture of the technology. Elements addressed will range from thermochemistry, electrochemistry, polymer science, and electrochemical engineering. Development of an understanding of the proton exchange membrane fuel

cell will be the primary objective. The student is expected to have a broad understanding of the technical needs, challenges, and opportunities after completing this course. Prerequisites: Advisor approval.

EER 580A. Photo Voltaic Technology
(Cross-listed as MER 580A)
The course focuses on the physical principles, technology, and design of efficient semiconductor photovoltaics. Course goals equip students with the concepts and analytical skills to understand efficiency limitations, to assess the viability of various solar and thermophotovoltaic technologies, and to introduce the physics required for understanding photovoltaic energy conversion. The course will focus on three primary aspects of photovoltaic energy conversion, (i) the transfer and conversion of solar (i.e. thermal) radiation to electronic energy, (ii) the theory and design of the semiconductor photovoltaic cell and (iii) photovoltaic systems and applications.
Prerequisites: Advisor approval.

EER 580B. Turbine Technology
(Cross-listed as MER 580B)
Course on fundamentals of design, analysis, and technology of turbo machinery – jet engines, gas turbines, steam turbines, water turbines, and wind turbines. The course will provide an understanding of all aspects of system development: thermodynamic cycles, design-point and off-design performance; function and design of components (inlets, compressors, combustors, turbines, outlets), operational limits, and environmental concerns; structural analysis, lifting, and materials; rotor dynamics and blade aeromechanics; clearance analysis, sealing, and packing; heat transfer, blade and component cooling; starting and control; power and thrust generation; testing and instrumentation. The student is expected to develop a broad understanding of the state-of-the-art, challenges, and future of turbine systems.

EER 580D. Wind Energy Technology
(Cross-listed as MER 580F)
The course focuses on "Wind Farm Project Design and Development" (1/2) and "Wind Turbine Technology" (1/2). Part I: Teams will demonstrate understanding of complete wind farm design/development process inclusive of site selection, wind resource evaluating target land area, turbine choice, location, energy projection, cost, transmission. Part 2: Focuses on technical understanding of Wind Turbine attributes such as structural, blade system, Nacelle system, electrical system, performance, and future opportunities.

EER 580E. Solar Energy Technology
(Cross-listed as MER 580E)This course is designed to enable the student to effectively grasp the complex and quickly changing solar industry. The course will cover such topics as the economy of solar, photovoltaic devices, systems and applications. In order to cover this broad range of technical topics, the course will utilize multiple instructors. Each instructor has significant expertise and depth in the given field and the student will be able to draw from their experience. Students completing this course will develop

knowledge of the solar industry, looking at the past, present and future of this technology area. Students will gain key technical background in every aspect of the industry and will be able to assess new technologies as they are developed. Understanding of the economics of solar and its future will also be obtained.

EER 581, 582, 583. Special Topics in Electrical Engineering.
Topics chosen from the current literature according to faculty and student interest. Possible topics include new developments in the major areas of electrical engineering such as electromagnetic fields, communications, controls, circuits, power, devices, electronics, and computer design. Topics may include but not be limited to image processing, machine vision, speech synthesis, integrated optics, antenna systems, adaptive filtering, variational methods, stochastic processes, optical communications, space and satellite communications, and computer networks. Each of these special topics courses has a variable content addressing specific current areas of interest to students. They will be offered whenever the need arises.

EER 590-595. Independent Study
(by arrangement)

EER 596-597. Research and Thesis
(by arrangement)

MS IN MECHANICAL ENGINEERING COURSES

Specific 2008 - 09 scheduled course offerings are identified via www.uniongraduatecollege.edu or by contacting the Dean of Engineering.

To ensure that students meet appropriate prerequisites for all courses, all graduate students are required to have a plan of study on file that has been approved by the graduate advisor.

Non-Credit-Bearing Courses

MER 599. Master of Science Graduate Project in Mechanical Engineering
This non-credit Seminar project provides a capstone experience for graduate mechanical engineering candidates not completing a thesis or independent study (i.e. all course work). The candidate and faculty advisor agree on project scope and evaluation process. The candidate receives a pass/fail grade which appears on the official transcript. This is a no-fee course.

Credit-Bearing Courses

MER 500. Elasticity
Winter; Pollack

The behavior of substances which possess the property of recovering their size and shape when forces producing deformation are removed. Review of stress and strain; study of two-dimensional problems in rectangular, polar, and curvilinear coordinates; introduction to three-dimensional problems; torsion and bending. Prerequisites: Calculus IV: Integral Vector Calculus, Topics in Analysis, Linear Algebra and Differential Equations, Advanced Mechanics or equivalents.

MER 501. Transport Phenomena
Spring; Bessler
The fundamentals of momentum, energy, and mass transfer and their analogous transport mechanisms. One-dimensional transport, transport properties, transport with internal generation, transfer coefficients, convective and turbulent transport. Prerequisites: Linear Algebra and Differential Equations, Heat Transfer Analysis and Design or equivalents.

MER 502. Engineering Analysis
Fall; Pollack
Topics in applied mathematics needed to analyze and model engineering problems by constructing mathematical models for a physical situation and the reduction of the ensuing mathematical problems to numerical procedures. Matrices, linear algebra, vector and tensor calculus, partial differential equations, calculus of variations, finite element and difference techniques, Fourier series and integrals. Prerequisites: Calculus IV: Integral Vector Calculus, Topics in Analysis, Linear Algebra and Differential Equations, or equivalents.

MER 506. Mechanical Behavior of Materials
Strain relationships in elastic and plastic behavior. Metallurgical fundamentals of plastic deformation. Dislocation theory. Materials testing. Creep and metal fatigue. Prerequisites: MER 500, MER 502 or equivalents.

MER 507. Design for Manufacturing
Relationships among mechanical design considerations, material properties and selection, and manufacturing techniques are developed to enhance manufacturing productivity and quality. Prerequisites: Dynamics and Kinematics, MER 502 or equivalent.

MER 508. Fracture Mechanics
Modern theory of fracture in design. Subjects treated include occurrence of fracture, fracture toughness, fracture resistance, and fatigue. Offered alternate years. Prerequisites: MER 500, MER 502 or equivalent.

MER 509. Current Approach to Fatigue in Design
Current approach to the mechanisms of fatigue nucleation, crack growth, and fracture; high and low cycle fatigue; temperature effects; predictive equations for design in pressure vessels. Prerequisites: MER 500, MER 502 or equivalent.

MER 510. Advanced Dynamics

Analytical dynamics with engineering applications to particles and rigid bodies. Topics include three-dimensional kinematics and dynamics, Lagrangian dynamics. This course is cross-listed in the Union College catalog as an undergraduate course (451). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Offered alternate years. Prerequisites: Advanced Mechanics, Rigid Body Mechanics or equivalent.

MER 512. Vibrations of Discrete Systems
Response of single and multi-degree-of-freedom systems to harmonic, periodic and impulsive excitation. Fourier series and transforms; ideal impulse and impulse response; convolution in the time and frequency domains; matrix and modal methods; system eigenvalues and vectors; impulse testing with a spectrum analyzer. Prerequisites: Dynamics and Kinematics, MER 502 or equivalent.

MER 515. Processing and Selection of Engineering Materials
A comprehensive examination of processing technologies for engineering materials, and the effects of selected processing routes and materials to meet and satisfy design and applications criteria. Prerequisites: Mechanics II: Materials Science or equivalent.

MER 516. Finite Element Methods in Engineering
Introduction to the use of finite element methods in various engineering applications. Prerequisites: MER 500, MER 502, or equivalent.

MER 522. Linear Control Systems
This course addresses practical control system design primarily from a classical perspective. Beginning with transfer function modeling of dynamic systems, the course moves through transient, root locus, and frequency response analysis to end with frequency domain techniques for controller design.

MER 525. Engineering Optimization
Introduction to development and application of mathematical and numerical methods used to analyze engineering problems including mathematical model building, unconstrained optimization, linear programming, constrained optimization, transformation and linear programming. Prerequisites: MER 502 or equivalent.

MER 532. Composites
A comprehensive introduction to composite materials and motivation for their use in modern applications. Topics include selection and availability of composite materials, manufacturing processes, useable theoretical concepts, testing and characterization of composites, and strength theories. This course is cross-listed in the Union College catalog as an undergraduate course (452). Graduate students will be expected to complete additional course work beyond the undergraduates in this class. Prerequisites: Materials Science, Strength of Materials, or equivalent.

MER 534. Dynamics of a Viscous Fluid

Analysis of Laminar and turbulent flow fields. Approximate solutions of the Navier-Stokes equations according to boundary layer theory. Prerequisites: Fluid Mechanics, Topics in Analysis or equivalent.

MER 536. Compressible Fluid Flow
Analysis of internal and external compressible flow fields. Supersonic airfoil analysis according to shock-expansion theory. Prerequisites: MER 501, MER 502, or equivalent.

MER 537 Combustion Fundamentals
The study of the chemical and physical processes in combustion. Analysis of thermochemistry and fuel oxidation, premixed and diffusion flame phenomena, combustion of condensed phases, detonation, combustion in practical systems, and combustion generated air pollution. Prerequisites: MER 501, MER 502, or equivalent.

MER 538. Fluid Dynamics of Turbomachinery
Analysis of the energy exchange between a continuously-flowing fluid and a turbomachinery rotor. Study of the design and operating principles of axial and radial-flow turbines, compressors, and pumps. Prerequisites: MER 501, MER 502, or equivalent.

MER 540. Thermodynamic Analysis
Consideration of various particulate and continuum bases for structuring thermodynamic principles and their application to the solution of current and prospective engineering problems. Prerequisites: MER 501, MER 502, or equivalent.

MER 550. Conduction Heat Transfer
Study of the equations for steady state and transient heat conduction using analytical and numerical techniques. Prerequisites: MER 501, MER 502, or equivalent.

MER 552. Convection Heat Transfer
Analysis of laminar and turbulent heat transfer processes. Approximate solutions of the energy equation according to boundary layer theory. Prerequisites: MER 501, MER 502, or equivalent.

MER 554. Flow and Heat Transfer in Multiphase Systems
Analytical and empirical methods for evaluation of flow characteristics, particularly in liquid vapor systems and boiling and condensing of heat transfer. Prerequisites: MER 501, MER 502, or equivalent.

MER 560 Nuclear Engineering and Technology
(Cross-listed as EER 570)
This course provides a working knowledge of nuclear engineering, reactor physics and reactor plant technologies including an overview of the required basic nuclear physics and mathematical principles. Emphasis will be on the reactor core. Course will culminate with the completion of a core design concept, which will be presented to the instructor and fellow students. Class participation will be highly encouraged.

MER 571. System Modeling & Optimization (ie Computational Intelligence)
(Cross-listed as EER 571, CSc 571)
Topics include the theory, design, and application of biologically and linguistically motivated computational methods emphasizing neural networks, genetic algorithms, fuzzy logic, and hybrid intelligent systems in which these methods are employed. Special emphasis will be placed on applying these techniques to "real-world" problems, and examples from a broad range of industrial applications will be presented. Homework assignments and a final project are required. Prerequisites: undergraduate calculus and linear algebra.

MER 572. Engineering Statistics
(Cross-listed as EER 572, CSc 572)
Modern engineering practice makes extensive use of statistical methods for the efficient collection and analysis of engineering data, and to support data-based decision making. This course will introduce the statistical tools that are of greatest importance for practicing engineers. Core topics to be covered will include probability and distribution theory, the construction and interpretation of statistical intervals, statistical hypothesis testing, regression analysis and empirical modeling, statistical experimental design, and statistical quality/process control. Additional specialized topics may also be covered, depending upon the interests of the class; possible topics include system reliability analysis, measurement system analysis, process capability analysis (and "six-sigma"), accelerated life testing, and acceptance sampling.

MER 573. Case Studies in Failure and Ethics in Engineering
(Cross-listed as EER 573)
This course provides a broad look at engineering failure and ethics in engineering. It will focus on engineering failure case studies and the principles of applied engineering ethics. To understand engineering disasters and to learn from these failures. To prepare engineers for the decisions they may face in their professional careers. Focus is on mechanical engineering.

MER 576 Motor Acoustics
(Cross-Listed as EER 576)
Development of the fundamental principles and equations for motor noise and vibration. Focus on development of analytical methods for predicting the acoustic performance of motors, along with an overview of numerical methods. Develop an understanding of the key principles and governing equations of motor acoustics. This covers noise generation by the motor, its structural dynamics response, and its sound radiation. Apply those equations to the analytical prediction of the noise sources and acoustic responses of motors. Understand the bounds of applicability of the analytical formulas, and the numerical methods which are available to predict the response of complex motors.

MER 580 Fuel Cell Technology
(Cross-listed as EER 580)

Survey course is to introduce fuel cell technology. The emphasis will be on the electrochemistry, the polymer materials science of PEM systems, and the various methods of generating power directly from a fuel and an oxidant. The course will cover the science and engineering aspects of fuel cells. The system effects of the stack will be introduced so as to provide a complete picture of the technology. Elements addressed will range from thermochemistry, electrochemistry, polymer science, and electrochemical engineering. Development of an understanding of the proton exchange membrane fuel cell will be the primary objective. The student is expected to have a broad understanding of the technical needs, challenges, and opportunities after completing this course. Prerequisites: Advisor approval.

MER 580A Photo Voltaic Technology
(Cross-listed as EER 580A)
The course focuses on the physical principles, technology, and design of efficient semiconductor photovoltaics. Course goals equip students with the concepts and analytical skills to understand efficiency limitations, to assess the viability of various solar and thermophotovoltaic technologies, and to introduce the physics required for understanding photovoltaic energy conversion. The course will focus on three primary aspects of photovoltaic energy conversion, (i) the transfer and conversion of solar (i.e. thermal) radiation to electronic energy, (ii) the theory and design of the semiconductor photovoltaic cell and (iii) photovoltaic systems and applications.
Prerequisites: Advisor approval.

MER 580B Turbine Technology
(Cross-listed as EER 580B)
Course on fundamentals of design, analysis, and technology of turbo machinery – jet engines, gas turbines, steam turbines, water turbines, and wind turbines. The course will provide an understanding of all aspects of system development: thermodynamic cycles, design-point and off-design performance; function and design of components (inlets, compressors, combustors, turbines, outlets), operational limits, and environmental concerns; structural analysis, lifting, and materials; rotor dynamics and blade aeromechanics; clearance analysis, sealing, and packing; heat transfer, blade and component cooling; starting and control; power and thrust generation; testing and instrumentation. The student is expected to develop a broad understanding of the state-of-the-art, challenges, and future of turbine systems.

MER 580C Principles of Thermal Systems
This course will focus on the analysis and modeling of thermal systems as applied particularly to the energy and environmental demands of today. The underlying common principles of thermal systems as related to energy conversion, utilization and storage will be considered. The course incorporates the fundamentals of heat engine and refrigeration cycle analysis, moist air psychometrics, and the dynamic behavior of traditional and renewable energy systems. Prerequisites: MER 502 (Engineering Analysis), MER501 Transport Phenomena) or equivalent understanding of thermal systems and analytical capability.

MER 580D. Welding
Welding metallurgy is a technologically important field that covers a wide range of scientific disciplines. This course uses welding metallurgy as a vehicle to introduce basic and broadly applicable concepts in solid state physics, chemistry, materials science, fluid mechanics, and solid mechanics. Topics covered include welding processes, heat and fluid flow, chemical reactions, residual stresses, solidification phenomena, phase transformations, and welding defects. Special emphasis will be placed on applied engineering problems and on the behavior of structural engineering materials. Real life examples will be used to illustrate the fundamental concepts of the course. Homework assignments and a final project are required.

MER 580F. Wind Energy Technology
(Cross-listed as EER 580D)
The course focuses on "Wind Farm Project Design and Development" (1/2) and "Wind Turbine Technology" (1/2). Part I: Teams will demonstrate understanding of complete wind farm design/development process inclusive of site selection, wind resource evaluating target land area, turbine choice, location, energy projection, cost, transmission. Part 2: Focuses on technical understanding of Wind Turbine attributes such as structural, blade system, Uacelle system, electrical system, performance, and future opportunities.

MER 580E. Solar Energy Technology
(Cross-listed as EER 580E)
This course is designed to enable the student to effectively grasp thecomplex and quickly changing solar industry. The course will cover such topics as the economy of solar, photovoltaic devices, systems and applications. In order to cover this broad range of technical topics, the course will utilize multiple instructors. Each instructor has significant expertise and depth in the given field and the student will be able to draw from their experience. Students completing this course will develop knowledge of the solar industry, looking at the past, present and future of this technology area. Students will gain key technical background in every aspect of the industry and will be able to assess new technologies as they are developed. Understanding of the economics of solar and its future will also be obtained.

MER 590-591. Independent Study
(by arrangement)

MER 592A. Masters Project
(by arrangement)
The preparation and writing of an extensive report on a topic of interest between the student and a department faculty member. A single course presented over two terms; one grade will be given for two terms of work only. Enrollment recommended no earlier than the last year of study. See MER 592B.

MER 592B. Masters Project
(by arrangement)

Continuation from MER 292A. Completed writing of the report and its oral presentation. Students must register for MER 592B even though they have previously registered for MER 592A.

MER 596-597. Research and Thesis
(As arranged by department).

SCHOOL OF MANAGEMENT COURSES

MBA students must take at least eight (8) core courses, including MBA 510/512 and MBA 506, prior to taking any advanced course.

With the exception of MBA 570, MBA students must take all core courses in each subject category prior to taking any advanced course in that category.

Health students must take HCM 500 and HCM 501 before taking any advanced course.

MBA COURSES

Specific 2006-07 course offerings are identified below and updated via www.uniongraduatecollege.edu or by contacting the Dean of The School of Management.

To ensure that students meet appropriate prerequisites for all courses, all graduate students are required to have a plan of study on file that has been approved by the graduate advisor.

*600 Series Indicates Advanced Course

MBA 500. Managing Ethically in a Global Environment
Fall, Winter, Spring; Clark / Summer; Belasen
This course examines issues of team functioning, ethics, and managing differences all in an increasingly global business environment. Students work individually and in groups to improve written and verbal communication skills.

MBA 501 (Half Course). Mathematics of Management
Fall, Winter; Bowman
This course focuses on mathematics useful in modeling management processes. Fundamental concepts of differential and integral calculus and their applications to management are addressed. Students must register separately for MBA 501 and MBA 502.

MBA 502 (Half Course). Introduction to Probability
Fall, Winter; Bowman
This course covers marginal, joint and conditional probability; random variables, expected value and variance; selected probability distributions and their uses in management; and sampling distributions and the Central Limit Theorem. Students must register separately for MBA 501 and MBA 502. Prerequisite: MBA 501.

MBA 506. Statistical Models for Management
Fall, Winter; Oppenlander / Spring; Poeth

This course emphasizes statistical approaches (confidence intervals, hypothesis testing, regression analysis, chi-square tables) that support managerial decision-making. Examples of such decisions include determining the best of several suppliers or appropriate salary levels based on education and required skill. Examples from quality management, such as capability analysis and control charting will also be included. Emphasis will be placed on problem statement formation, translation of problem statements into quantitative terms, and finding appropriate data to reach supportable conclusions. Analysis will be performed using statistical and other software. Prerequisites: MBA 501, and MBA 502.

MBA 510. Financial Accounting
Fall; Arnold / Winter, Spring, Summer; Lewis
An introduction to the "generally accepted accounting
principles" of financial accounting as applied to publicly reported financial statements. Emphasis is to be placed on understanding the application of "generally accepted accounting principles" to financial statements. This course is designed for individuals with no prior academic or professional education on the topic of financial accounting.

MBA 512. Managerial Accounting
Fall (On-line); St. John / Winter, Spring (In class); Lewis / Summer (On-line); St. John
An introduction to the tools and techniques of financial analysis and decision-making. Topics covered include financial statement analysis, cost classification and behavior, cost-volume-profit analysis, incremental cost analysis, time value of money, capital budgeting, and financial planning. Spreadsheet programs are used in this course. Prerequisite: MBA 510. Students are expected to be proficient in the use of Microsoft Excel®.

MBA 517. Advanced Corporate Finance
Fall, Winter, Spring; Feng
This course covers advanced topics in corporate financial management. The analytical skills necessary to evaluate complex financial problems are developed through case studies. Topics covered include: advanced capital budgeting, agency theory, option theory and applications, measuring and hedging financial risk, merger and acquisition analysis, corporate financial analysis and planning models, and short-term financial management. Prerequisites: MBA 506, 510 and 512.

MBA 520. Principles of Economics
Fall (In class), Spring (On-line); Lambrinos
This course covers the basic microeconomic model of price determination; the impact of market structure on price and output decisions by firms; the role of the public sector in an economy; the basic macroeconomic model of national income determination; the impact of fiscal and monetary policies on employment levels, price stability and economic growth; and international economic relationships.

MBA 525. Marketing Management and Strategy
Fall; Carlson / Winter, Spring; Staff

In this course, marketing-related considerations for organizations, both generally and specifically, are discussed in a manner that is designed to provide students with a basic-level understanding of issues organizations face which have strategic importance from a marketing perspective.

MBA 531. Operations Management
Fall, Winter, Spring; Bowman / Winter; Kauffman
This course starts with a look at total quality management with an emphasis on the Six Sigma approach to process improvement. Next the fundamentals of inventory management are discussed with the primary objective being to understand the causes of inventory and how to effectively reduce inventory levels. This topic is expanded into the important topics of lean supply chain design and management, and lean production management. A balanced approach is taken with coverage of tools but also an emphasis on the impact of strategic and managerial decisions on the effectiveness of various approaches to operations management.

MBA 545. Achieving Business Value from Information Technology
Fall, Winter, Spring; Otto / Summer; McCorkle
Information Technology is pervasive in today's organizations. For many firms IT is the single largest capital investment, often exceeding 50% of capital expenditures. As a result, in this course we take the strategic perspective of the general manager and study how organizations can get more value from their IT investments. Thus, the course focuses on the business value that can be achieved rather than the details of the technology. The issues covered include planning an IT application portfolio, enabling business processes with IT, and implementing IT systems. The applications covered include transaction processing systems, decision support systems, and knowledge-base systems. Participants will work in a group environment on cases, presentations, and a project report as described below.

An IT background is not required and this is not a "technical" course. This is, however, an integrative course, including issues of business strategy, finance, and the study of organizations and people for the creation of business value requires the successful integration of these issues with potential of information systems.

MBA 551. Managing People and Teams in Organizations
Fall, Winter, Spring, Summer; Nydegger
This course approaches management issues from the "human" side. It provides individuals with the opportunity to learn management skills and concepts through hands-on experiences in the class. Particular attention is paid to relevant Organizational Behavior Psychology concepts such as Motivation, Leadership, Communication, Performance Appraisal, Job Satisfaction and others. Additional course outcomes include ability to interact more effectively in groups and how to express oneself convincingly both verbally and in writing. The course provides students with experiences and knowledge that can be applied immediately when they finish the course.

MBA 570. Legal Principles of Business
Fall; Hogan / Winter; Valle
The objectives of the course are to enable the business manager to identify situations with legal implications and to interact effectively with professional legal counsel. Particular areas of the law examined during the course are contracts, sales, negotiable instruments, negligence, product liability, secured transactions, and ethical considerations. Not open to JD/MBA students.

MBA 611. Personal Financial Planning
This two-part course first presents an examination of personal financial planning in a global environment encompassing topics such as personal budgeting, insurance coverage, investment planning, managing credit, retirement planning and estate planning. The course then extends the topics to related domestic and international tax issues of income tax considerations for individuals, corporations and partnerships. Knowledge of the current business environment (tracked through the Wall Street Journal, Business Week, online at CNNFN.com, etc.) will be expected. Prerequisites: MBA 510 and 512.

MBA 619. Investments
Fall, Spring; Feng
This course provides an in-depth analysis of modern investment analysis and portfolio management techniques. Current theory, empirical evidence, and institutional practices are considered. Topics covered include portfolio theory and asset pricing models, market efficiency, fixed-income portfolio management and immunization, equity valuation models, the valuation of options, futures and other derivative securities, portfolio management and performance evaluation, and international diversification. Recommended: MBA 517. Prerequisites: MBA 510 and 512.

MBA 620. Investment Management
Every other week for all three terms; Feng
The preliminary goal of this course is to provide students with an opportunity to gain valuable hands-on experience in fiduciary management of investment assets, such as security research, valuation of risky assets, asset allocation, and portfolio management. Investment is a field of business where intuition often plays a more important role than theoretical knowledge. In this course, we discuss the rapid development in investment theory that helps us identify the factors that are responsible for price movements. We focus on how to apply theory into practice. Students will work on challenging, integrated, analytical projects using real time capital market data. This course will increase the student's knowledge in industries such as equity research, investment banking, commercial banking, and corporate finance. This course runs for three terms starting in the fall term. This course is run in conjunction with the Investment Club; therefore participation in the Investment Club is required. Prerequisites: MBA 510 and 512.

MBA 624. Sports Economics
Spring; Lambrinos

Topics covered in this course include the measurement of competitive balance and its impact on sports leagues; discrimination in sports; efficiency of sports teams and individual athletes; labor unions and labor relations in professional sports; the efficiency of sports wagering markets; and the estimation of marginal product for professional athletes. Prerequisites: MBA 506 and 520.

MBA 626. Marketing Research Techniques
Fall; Carlson
The objective of this course is to provide comprehensive exposure to marketing research methods. The course is designed for the manager with ultimate responsibility for identifying the scope of and implementing particular market research activities. The course explores the application of scientific investigation to the identification and solution of marketing problems. Prerequisites: MBA 506 and 525.

MBA 627. Marketing High Technology Products
Winter; Boskin
The study of marketing high technology products will develop an understanding of strategies and practices involved in marketing technologically oriented products and services. To see if and where these strategies differ from marketing of non-technical products/services, and to determine how and why they vary. The objective of this course is to follow a more broad-based strategy by exposing the student to different schools of thought in this area along with their respective advantages and limitations. In general, this course will focus on honing our market analysis skills to leverage decision-making in the high-tech context. This course will enhance your skills in analyzing industry trends, identifying threats and opportunities, designing suitable products and marketing strategies to best suit market/environmental conditions, customer segmentation and analysis, and in assessing/monitoring a firm's relative advantage via competitive intelligence.

MBA 628. Consumer Behavior
Fall; Carlson
This course is designed to enhance your understanding of consumers like you and me. To that end, we will explore the current state of knowledge regarding consumer behavior through discussion of several theories and marketplace exemplars. This exploration will identify many, many influences that may shape an individual's behaviors in the marketplace, with subsequent discussions regarding the impact of these influences on various managerial decision-making situations. Prerequisite: MBA 525.

MBA 629. Money, Markets and Banking
Winter, Summer; Murtaugh
The course covers the nature and functions of money and finance in the economy. Commercial and central banking, monetary theory, and monetary policy are also considered. Recommended: MBA 517. Prerequisites: MBA 510 and 512.

MBA 632. Quality Systems Management
Fall; Doganaksoy

This course examines quality improvement approaches in the context of overall organizational objectives. Topics include: the contents and impact of important government and industry standards such as ISO 9000; Six Sigma, including the Measure-Analyze-Improve-Control model (MAIC) and Design for Six Sigma (DFSS); extensions to benchmarking and quality functional deployment; advanced tools, such as systems reliability and maintainability and life data analysis. Prerequisites: MBA 506 and 531.

MBA 635, Project Management
Spring; Kauffman
A project is a one-time or infrequently occurring operation with a unique goal, a limited lifespan, and limited resources. This course will focus on the basic components of project management, including statements of work, project selection, leadership and team building, communication, budgeting, resource scheduling, metrics and closure. Students will have the opportunity to develop a project plan of their own choosing using MS Project as well as explore current issues in project management through case discussions.

MBA 640. Integrating eSystems into Global Businesses
Fall; Otto
The objective of this course is to introduce participants to web-enabled commerce, strategies, critical issues and applications. The issues we will cover include business planning and strategy development for E-Commerce processes, identification of critical success factors, security threats, and the implementation of EC application to facilitate global business processes. The applications we will discuss in class include front- and backend systems, transaction processing systems, and collaboration technologies such as customer relationship management, supply systems, and collaboration technologies such as customer relationship management, supply chain, and web-enabled decision support systems.

While the course is focused on managerial issues of E-Commerce, participants need to have a good understanding for the underlying technology, which facilitates the data exchange. Participants will work in a group environment on cases, presentations, and a project report.

MBA 641. Systems Analysis and Simulation
Winter; Bowman
In this course students build and utilize computer simulation models to analyze a wide range of systems. Applications include restaurants, doctors' offices, customer call centers, and many others. Models are built using specialized simulation software as well as Microsoft Excel. Prerequisites: MBA 506 and MBA 531.

MBA 642. Business Analysis Using Information Systems:
Spring; Otto
This course examines a set of information systems which specifically support managerial decision makers: Decision Support Systems, Group Decision Support Systems, Executive Information Systems, Data Warehouses, Expert Systems, and Neural Networks. Over the semester, we will explore and discuss the development, implementation, and application

of these systems, how these systems can be applied to current business problems, as well as how organization issues impact the implementation and usage of these systems. This will involve developing conceptual knowledge for such systems as well as gaining practical experience with the structural dimension for decision support applications. The focus in this course is on how techniques for managing knowledge can be applied, enhanced, extended, and integrated in the development of computer based DSSs. Each student will work on a project to identify the value proposition for a decision support systems and how such a system or application can be deployed within an organization.

MBA 650. Competing by Design
Winter, Summer; Belasen
Design often signals a shift in strategic emphasis and patterns of organizational performance. Design can also be used to shape an organization's tone or operating style. Dramatic and lasting restructuring or reengineering plans often fail without the mindset of change architects who share the new strategic vision and corporate values. The ultimate goal of design is to use organizational structures, systems, and processes creatively as a sustainable source of competitive advantage. This course focuses on examining how successful corporations leverage competitive advantages through restructuring and external alliances. Students will apply theoretical knowledge and conceptual models to analyze organizational structures, diagnose organizational design, and evaluate a range of design options and implementation strategies available for transitioning organizations.
Prerequisite: MBA 551.

MBA 652. High Performance Leadership
Spring; Belasen
This course emphasizes cognitive skills and experiential practicum learning applied to ongoing leadership and organizational problems. Students learn about leadership roles and competencies essential for building and supporting organizational capabilities and business strategies in global markets. The course also enables students to learn a method to diagnose their strengths and weaknesses in leadership capacities and measure their proficiencies against benchmarked models of high performance leadership. Prerequisite: MBA 551.

MBA 653. Organizational Development and Transformation
This course considers the theory and practice of planned organizational change. Students are exposed to a variety of intervention techniques applicable in a wide range of organizational settings. Lectures are complemented with participatory exercises and interactive discussions. Prerequisite: MBA 551.

MBA 654. Labor Relations
Summer (on-line); Ari Belasen
This comprehensive course ties together the history of modern labor movements in the United States with issues facing workers in the Twenty-First Century, including the impact of globalization and international outsourcing. Subtopics include negotiation, conflict resolution, and workforce diversity. In addition, a comparative study on

international unions will be examined. Each week, current events and their implications to labor relations will be discussed. Prerequisite: MBA 551 recommended.

MBA 656. Ethical Issues in Management
The purpose of this course is to develop a general management perspective that includes the abilities to: 1) identify ethical issues in management, 2) analyze these issues in terms of several important frameworks for ethical reasoning and 3) appreciate the central role of ethics in managerial decision-making. Issues from a variety of the functional areas of business – including accounting, marketing and advertising, financial services, human resources, and information technology – will be considered. The course will rely heavily upon the case analysis method, group discussion, and group presentations.

MBA 660. Executive Decision Processes in Global Environments
Fall; Belasen
Along with information technology, international management is the major challenge facing organizations in the hypercompetitive global marketplace. Companies that once served a specific geographic area or serviced a specific need have learned to compete with anybody, anywhere, anytime. Needing to diversify in order to compete effectively, an increasing number of multinational companies are finding it essential to anticipate changes and innovate continually to become world-class organizations. Global management requires visionary leaders and strategic thinkers who are driven by a customer focus and continuous improvement, supported by a fluid virtual organization and sustained by creative human capital and extensive information technology. These leaders must also recognize the existence of cognitive barriers to decision-making and how to overcome decision traps and make better choices for their multinational companies. Using Internet-based search engines, cases, and small group projects, students will have hands-on experiences and acquire the skills necessary to become successful decision makers for their multinational companies. Prerequisite: MBA 551

MBA 661. International Finance
Winter; Luzine
An analysis of international financial markets and the special problems and opportunities associated with the financial management of multinational firms. The international monetary and banking system, balance of payments, and economic parity relationships are also examined. Foreign exchange risk management, international financing activities, multinational capital budgeting, political risk, international taxation issues and diversity of financial reporting are considered. Prerequisites: MBA 506, 510 512 and 517.

MBA 662. International Business
Fall; Shaye
This course examines international business management as influenced by the important economic, political and cultural environment within which businesses must conduct international trade and investment. The problems and issues confronting international managers are evaluated related to a firm's strategy, organizational structure, manufacturing, material management, marketing, R&D, human resources and finance. Competitive strategies are examined that have been successful in leading international

companies. Case studies are used extensively to illustrate the relevance of these topics in the practice of international business.

MBA 664. Entrepreneurship
Winter; Schwartz/Buse
Course held off campus, 8 Airport Park Blvd, Latham, NY
(http://www.shggroup.com.contactus.htm) for directions.
The primary objective of this course is to develop an awareness of the process of new venture creation, whether it is an intrapreneurial or entrepreneurial event. The skills, knowledge and attitudes important for creating new ventures, and the complex tasks faced by individuals who start and manage new and growing businesses as well as corporate ventures and franchises will be addressed. The course is designed to provide a broad overview of management and financial issues. We will pay particular attention to: entrepreneurial decision-making, techniques entrepreneurs and investors use for evaluating and testing the feasibility of business opportunities, understanding the impact of market and industry forces on start up, performance and survival of new ventures, financing a business opportunity, etc. Prerequisite: MBA 551.

MBA 665. International Marketing Management
Spring; Shaye
This course examines development of international marketing strategies, from determining objectives and evaluating international market opportunities through coordinating strategies in world markets. Particular emphasis is placed on application of marketing principles in the multinational
environment. Prerequisite: MBA 525.

MBA 667. Leaders on Leadership
Fall; Huppertz/Robb
Through a series of interviews/presentations by highly regarded Tech Valley leaders, this elective MBA course will provide students with an understanding of what it takes to be a dynamic organizational leader. In addition to learning about the current challenges faced and strategies employed by these outstanding professionals, the course will focus on strategies new managers can pursue on the job to bootstrap their way to success. Building upon a base of classic academic literature, current books and articles on the topic of leadership will be explored.

Teams of students will be tasked with preparing supporting materials for the speakers featured during each class session. This will require reading material focused on the assigned topic, formulating interview questions for the speakers, meeting in advance with the speakers to prepare for the session, and then helping to facilitate the speakers' presentations during class. Each team will be expected to write a paper addressing its assigned topical area. Other course assignments will include preparation of case studies related to the various topical areas addressed during the course. Several company visits will also be included. Prerequisites: none.

MBA 675. Foundations of Human Resource Management

Winter; Paludi
An introduction to the theory and practice of human resource management that examines the psychological, economic, political, legal and managerial aspects of the following functions: recruitment and selection, job analysis, human resource planning, training and development, foundations of selection, employee rights and ethics, and equal employment opportunity. The focus of this course includes profit, non-profit and governmental organizations with particular emphasis on health care delivery firms. Prerequisite: MBA 551.

MBA 676. Managing Human Resources
Spring; Paludi
An introduction to the theory and practice of the following human resource management functions: performance appraisals, establishing rewards, pay plans and benefits, health and safety in the workplace, workplace violence, effective workplace communications, discipline and corrective action, labor relations and collective bargaining. Three perspectives will be addressed in each function: management, psychological and legal. The focus of this course includes profit, non-profit and governmental organizations with particular emphasis on health care delivery firms. Prerequisite: MBA 551.

MBA 677. International Human Resource Management
Summer; Paludi
International Human Resource Management will focus on how effective human resource policy and practice contributes to a global company's competitiveness. This course will be considered within the context of strategic business objectives, culture, and resource management constraints given by the various national entities. Special focus will be placed on understanding the unifying human resource policies that support the strategic objectives of a global organization. This course will draw on practical examples from companies that have experienced challenges of international human resource management. Prerequisite: MBA 551

MBA 681. Strategic Management and Leadership (MBA Capstone)
Winter, Spring; Chudzik and Frederick
The goal of this course is to integrate all of the MBA course work to prepare the students to address the full scope of business they will face as leaders in the business world. This is done by having student teams work with real start-up companies to develop a complete business plan for the company. The plans are developed in phases over the term with the teams working closely with their companies and culminating in a presentation of the plan to a simulated investor panel made up of the company CEOs. Students must have three or fewer courses left to complete the degree requirements after taking MBA 681.

MBA 682. Management Science
Spring; Bowman
Management science refers to the use of mathematical/
computer models to solve managerial problems or help make managerial decisions. This course covers the management science tools most widely used in industry (mathematical programming, queuing theory, decision analysis, network models of project management,

and an introduction to simulation). Students will learn the solution procedures associated with each approach, utilize software to implement the procedures, and conduct case studies using the computer models. Prerequisites: MBA 506 and 531.

MBA 683. Management Internship
No fee; Fall, Winter, Spring, Summer

MBA 690. Independent Study
Written permission of the instructor and Dean is required.

MBA IN HEALTHCARE MANAGEMENT COURSES

HCM 500. Introduction to Health Systems
Fall; Strosberg
(Cross-listed as LIM 502)
This course examines the determinants of health, illness, and medical care utilization, institutional arrangements and settings for the delivery of acute and chronic care, the doctor-patient relationship, resource allocation and financing, and measuring and evaluating system performance. This is a prerequisite to all advanced health courses.

HCM 501. Health Systems Management
Winter; Nydegger
This course examines the various aspects of managing in the modern health care environment. A variety of methods including lectures, case studies, in-class exercises, and student presentations will be used. Topics covered include quality improvement, ethical management, managing diversity, communications, leadership, motivation, team building, and conflict resolution. Prerequisite: HCM 500.

HCM 526. Health Systems Marketing
Winter; Huppertz
This course introduces students to the principles of marketing and their application to Healthcare settings. At the end of this course, students should a.) Understand what marketing can do for the healthcare organization in terms of contribution to strategic planning, building business, strengthening relationships between the organization and its constituents, and achieving competitive advantage. b.) Clearly understand how to use health data in marketing planning and implementation. c.) Appreciate the challenges of evaluating the effectiveness of marketing communications investments made by healthcare organizations. d.) Understand the relationship between patient/customer satisfaction and service quality in health organizations. e.) Understand how to judge marketing communications quality, both qualitatively and quantitatively. f.) Demonstrate effective communications skills through in-class participation, writing assignments, and class presentations. g.) Analyze marketing problems and select effective strategies for solving them. h.) Understand key marketing concepts and their applications to business and healthcare organizations.

HCM 571. Clinical Leadership Practicum

(Cross-listed as LIM 571 - *Spring; Strosberg*)
Students will work in the field with a preceptor in a clinical leadership role. Students may be placed in a variety of health care settings including: hospitals, physician offices, health maintenance organizations, etc. Classes meet every other week to discuss students' field experiences and selected readings.

HCM 690. Independent Study in Health Systems
Students pursue programs of independent study in a particular area of health systems under the supervision of a faculty member. Written permission of the instructor and MBA Dean is required.

HCM 617. Healthcare Finance
Winter, Spring; Colacino
This course covers financial management in a regulated health care environment. Topics include cost-finding and third-party reimbursement, contemporary issues in health care financing, sources of capital, capital budgeting, financial planning and analysis, cost accounting, and managed care issues. Prerequisites: MBA 510 & 512.

HCM 620. Health Economics
Fall; Lambrinos
This course is intended for students entering the health field and investigates economic approaches to problems and solutions. Students obtain an understanding of how economics contributes to public and private decision-making in health care, and learn to properly interpret economic research results and apply them to work performed by health planners and administrators. Prerequisites: HCM 500, MBA 506 and 520.

HCM 645. Introduction to Strategic Use of Information Technology (1/2)
Fall, Winter, Spring, Summer; Otto
This is a five-week introductory class which will cover the basic concepts of information technology. Specific topics include hardware, software, databases, and telecommunications. Class will be a mix of lecture, class participation, and guest speakers. Case studies, along with discussion of contemporary IT events and situations will be used to demonstrate the importance and impact of IT in the modern world. The focus of the course is on real-world problem solving and interactive discussions rather than a presentation of facts. This course is the first five weeks of MBA 545. This course is a prerequisite for HCM 646 Health Information Technology.

HCM 646. Health Information Technology (1/2)
Winter; Smith/Otto
HCM 646 builds on the information technology foundation presented in HCM 645 by focusing on clinical and administrative applications commonly found in health care organizations. The course surveys the historical development, structure, role and use of information systems in the management, strategic planning and operation of health service organizations. Emphasis is on information technology from the end user's perspective, particularly the role of information technology in patient safety, quality management and how information technology supports the efficient and effective

delivery of health services to the target population. Prerequisite: HCM 645 Introduction to the Strategic Use of Information Technology.

HCM 650. Structural Dynamics in Healthcare Systems
Fall; Strosberg
Application of organization theory to health care organizations and systems for the purpose of improving performance. Topics include: organizational structure and design, coordination and control, power and politics, organizational culture, organizational ethics, organizational change. Prerequisites: HCM 500 and 501.

HCM 656. Group Practice Administration
Seminar and Practicum
Winter; Kleinbauer
The objective of this course is to introduce students to the organization and management of private group practice through seminar and practical experience. It is intended that this course will prepare students for employment in private group practices and/or other ambulatory care organizations. Prerequisites: HCM 500 and 501.

HCM 674. Legal Aspects of Healthcare
Summer; Zambri
(Cross-listed as LIM 674)
This course is designed to familiarize students with basic legal issues involved in managing health care systems. Antitrust, consent, labor law, malpractice, professional rights and other problems are explored using actual and hypothetical case studies. Not open to JD/MBA students.

HCM 680. Health Policy
Spring; Strosberg
(Cross-listed as LIM 670)
This course covers health public policy formulation and implementation and is designed to provide an understanding of the political and regulatory environment of health care organizations. Prerequisites: HCM 500 and 501.

HCM 681. Strategic Issues for Healthcare Organizations (Health MBA Capstone)
Spring; Huppertz and Smith
This course is designed to integrate the concepts and skills associated with managerial problem-solving learned throughout the MBA in Health Systems Administration program. Students analyze case studies addressing the strategic realignment of health service organizations in today's turbulent environment. A variety of expert practitioners present their views on this topic. Students must have three or fewer courses left to complete after taking HCM 681.

HCM 683. Health Internship
No fee; Fall, Winter, Spring, Summer

HCM 684. Strategic Issues for Healthcare Organizations (Capstone)

Summer; Staff
This course is designed to integrate the concepts and skills associated with managerial problem-solving learned throughout the MBA in Health Systems Administration program. Students analyze case studies addressing the strategic realignment of health service organizations in today's turbulent environment. A variety of expert practitioners present their views on this topic.

STA 501. Introduction to Probability and Statistics
Winter; Staff
This course studies the fundamentals of applied probability, most important distributions, acceptance sampling, confidence intervals, point estimation, and tests of hypotheses.

CENTER FOR BIOETHICS AND CLINICAL LEADERSHIP COURSES

MS IN BIOETHICS COURSES

BIE 500. Proseminar in Health and Human Values
Summer (two weeks in August), On-site, D, Union Graduate College w/ Clinical Visit to Mount Sinai School of Medicine (NYC); Baker, Rhodes
An intensive two-week introduction to current topics in clinical ethics and bioethics, taught seminar style at Union Graduate College, with a clinical visit to Mount Sinai School of Medicine in New York City. This overview of current issues in bioethics humanities involves four special pro-seminars, case conferences and ethics rounds. There will also be training in the computer skills (demonstrations, workshops) essential to mastering distance learning. Must be taken in the first fifteen months of enrollment.

BIE 510. Biomedical Ethics
Fall, Distance Learning; Baker
An advanced historically-based introduction to bioethics and clinical ethics focusing on such formalizations of medical morality as the Hippocratic Oath, the AMA codes, the Belmont Report and Beauchamp and Childress Principles, and the idea of casuistry. Major cases in bioethics will also be reviewed and the evolution of the core concepts and infrastructure of medical ethics and bioethics will be examined.

BIE 520. Healthcare Policy
Winter, Distance Learning; Strosberg
This course provides an understanding of the public policy-making process and the political and regulatory environment in which health care organizations function. It also provides an understanding of managerial processes, politics, and structure of the health care organizations where ethical policies and practices are implemented and carried out on an ongoing basis. Policies for consideration include resource allocation, end-of-life decision-making, accountability and performance measurement, and conflict-of-interest.

BIE 530. Bioethics and the Law
Spring, Distance Learning; Greenlaw and Ouellette
This course is designed to familiarize students with major legal issues and legal concepts relevant to bioethics.

BIE 545. Reproductive Ethics
(elective)
Summer, Distance Learning; Steinbock
An investigation of the ethical and legal problems associated with new reproductive technologies and genetics.

BIE 555. Research Ethics

(elective)
Fall, Distance Learning; Gligorov, Philpott, wilets
A course in research ethics including a discussion of the IRB process.

BIE 565. Empirical Research Methods in Bioethics
(elective)
Distance Learning; Oppenlander
A course in empirical research methodology designed to teach how to conduct empirical research in the field, and how to analyze the empirical bioethics literature.

BIE 590. Clinical Ethics
Winter, Distance Learning; Rhode, staff TBA
This course deals with the practical applications of clinical ethics, including clinical ethics consulting and its recording and documentation, the work of ethics committees and IRBs, and other practical ethics of clinical ethics.

BIE 610. On-Line Practicum
Spring, Distance Learning; Orr, Rhodes, Strosberg
A supervised practical experience in clinical ethics designed to teach skills of clinical ethics consultation. Prerequisite: BIE 590.

BIE 620. On-Site Practicum
Spring, On-site, Mount Sinai School of Medicine
A supervised practical experience in clinical ethics designed to teach skills in clinical ethics consultation. (One week during Spring Term) Prerequisite: BIE 590.

BIE 630 & BIE 640. Masters Project
Winter and Spring, Distance Learning
The masters project in bioethics or clinical ethics, will involve two terms of research culminating in a written document addressing some aspect of clinical ethics or bioethical policy, such as a proposal to revise or reform practices at a medical institution or managed care organization, or a proposal to change bioethical policy.

BIE 650. Capstone
Spring, On-site, Union Graduate College
Capstone practicum in which students demonstrate their mastery of clinical ethics, research ethics, or health policy. (One week during Spring Term)

MS IN CLINICAL LEADERSHIP COURSES

PHL 574. Biomedical Ethics
Spring E; Baker
An advanced historically based introduction to bioethics and clinical ethics focusing on such formalizations of medical morality as the Hippocratic Oath, the AMA codes, the Belmont Report and Beauchamp and Childress Principles, and the idea of casuistry.

Major cases in bioethics will also be reviewed and the evolution of the core concepts and infrastructure of medical ethics and bioethics will be examined.

LIM 500. Introduction to Health Systems
Fall D; Weiner
This course examines the determinants of health, illness, and medical care utilization, institutional arrangements and settings for the delivery of acute and chronic care, the doctor-patient relationship, resource allocation, and the measuring and evaluating system performance.

LIM 502. Introduction to Health Systems
(Cross-listed as HCM 500)
This course examines the determinants of health, illness, and medical care utilization, institutional arrangements and settings for the delivery of acute and chronic care, the doctor-patient relationship, resource allocation and financing, and measuring and evaluating system performance. This is a prerequisite to all advanced health courses.

LIM 503. Healthcare Leadership
Winter D; Strosberg
This course examines managerial roles and processes within health service organizations - organization design, managerial epidemiology, governance, total quality management, human resource management, labor relations, and ethics. Prerequisite: LIM 500.

LIM 544/545. Health and Human Values
Summer (two weeks in August), On-site, D, Union Graduate College w/ Clinical Visit to Mount Sinai School of Medicine (NYC); Baker, Rhodes
The seminar in Health & Human Values I & II (LIM 544 & LIM 545) is an intensive two-week introduction to current topics in clinical ethics and bioethics. The courses are taught seminar style, at Union Graduate College and the Mount Sinai School of Medicine. Students are immersed in clinical case conferences, attend ethics rounds and are given an overview of current issues in bioethics.

Leading scholars from around the US conduct special pro-seminars for the Leadership in Medicine students and students in the Bioethics Program; a joint program between Union Graduate College and the Mount Sinai School of Medicine. Students in the two programs work in teams to prepare case analyses guided by professional clinical ethicists.

LIM 553. Economics of Health
Spring; Chang
Examination of demand and supply for medical personnel; analysis of hospital cost, inflation, and health insurance. Discussion of issues in cost benefit analysis of public health and regulation of health care markets.

LIM 571. Clinical Leadership Practicum
Spring; Strosberg
(Cross-listed as HCM 571)

Students will work in the field with a preceptor in a clinical leadership role. Students may be placed in a variety of health care settings including: hospitals, physician offices, health maintenance organizations, etc. Classes meet every other week to discuss students' field experiences and selected readings.

LIM 674. Legal Aspects of Healthcare
(Cross-listed as HCM 674)
This course is designed to familiarize students with basic legal issues involved in managing health care systems. Antitrust, consent, labor law, malpractice, professional rights and other problems are explored using actual and hypothetical case studies. Not open to JD/MBA students.

LIM 670. Health Policy and Managerial Epidemiology
(Cross-listed as HCM 680)
This course covers two main topics. The first (focusing on public policy formulation and implementation) is designed to provide an understanding of the political and regulatory environment of health care organizations. The second focuses on understanding and applying basic epidemiological methodologies to the health care management arena. Prerequisites: HCM 500 and 501.

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FACULTY

SCHOOL OF EDUCATION FACULTY

FULL TIME

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PART TIME

Ed Alston, Adjunct Associate Clinical Professor of Education; BA 1977, MA 1979, CAS 2006, University at Albany

Charles Batson, Associate Professor of French; BA 1987, Furman University; MA 1989, University of Virginia; PhD 1997, University of Illinois

Stephen M. Berk, Henry and Sally Schaffer Professor of Holocaust and Jewish Studies; BA 1962, University of Pennsylvania; MA 1964, University of Chicago; PhD 1971, Columbia University

Ken Blom, Clinical Associate Emeritus Professor of Education, BS 1968, PhD 1988, State University of New York at Albany

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SCHOOL OF ENGINEERING AND COMPUTER SCIENCE FACULTY

PART TIME

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SCHOOL OF MANAGEMENT FACULTY

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CENTER FOR BIOETHICS AND CLINICAL LEADERSHIP FACULTY

PART TIME

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Robert D. Orr, Professor of Bioethics; BS 1962, Houghton College; MD 1966, McGill University; Fellow 1990, University of Chicago

Alicia Ouellette, Adjunct Associate Professor of Bioethics; AB 1988, Hamilton College; JD 1994, Albany Law School

Bonnie Steinbock, Adjunct Professor of Bioethics; BA 1967, Tufts University; PhD 1974, University of California, Berkeley

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