2014 - 2015 Catalog

Welcome to Union Graduate College. We hope that you find the contents of this catalog useful. For additional information please feel free to contact our Student Services Office.

Union Graduate College
80 Nott Terrace
Schenectady, New York 12308
Phone: (518)631-9910
Fax: (518)631-9901
Email: info@uniongraduatecollege.edu
www.uniongraduatecollege.edu

Provisions of this publication are not to be regarded as a contract between the student and Union Graduate College. Union Graduate College reserves the right to make changes in this catalog, including its course offerings, admission and 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 Facilities and Campus Safety of Union Graduate College at 80 Nott Terrace, Schenectady, NY 12308. The Advisory Committee on Campus Safety will provide upon request all campus crime statistics as reported to the United States Department of Education.
Information is also available from the Union Graduate College website:
http://www.uniongraduatecollege.edu/students/safety/

STATEMENT OF NON-DISCRIMINATION

Union Graduate College does not discriminate on the basis of individual's age, race, creed, color, national origin, sexual orientation, military status, sex, disability, predisposing genetic characteristics, marital status, or domestic victim status. 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.

A MESSAGE FROM THE PRESIDENT

It's my pleasure to introduce you to the unique programs offered by Union Graduate College. We are a student centered organization located just off of the beautiful Union College campus in Schenectady, New York at 80 Nott Terrace.

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

Whether face-to-face or online a Union Graduate College degree is defined by:

Individual attention to student goals. Student orientated services are unrivaled in the region. 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.

Professionalism. Programs where the mature graduate student is treated with respect as an adult responsible for their own education.

Real – World Experience. Internships, capstone and other real world based projects, completed in collaboration with faculty and dynamic schools, hospitals, corporations and organizations, prepare students to take on complex problems and questions, assume responsibility, and become the professionals on which successful organizations rely.

High Motivation. We challenge students to work hard, think innovatively, 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 provide 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. Job placement and degree completion rates remain high despite the poor economy.

Graduate-Only Focus. Rather than serving many student populations, our career and placement office serves only graduate students and the employers who hire students with advanced degrees. The office's professionals have developed strong relationships with 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 changing demands 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 staff, 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 meet my wonderful colleagues and enjoy our environment.

Laura Schweitzer, PhD
President

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 and Health Sciences. Each has its own governing board and is responsible for its own programs. However, there are several degree programs jointly offered by Union University Schools.

HISTORY OF UNION GRADUATE COLLEGE

The graduate programs of Union University date back to the early 1900's. 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. Union Graduate College, as a separate institution, was formed in 2003 from all of the graduate programs of Union College. In 2009 Union Graduate College moved to its own campus, the *Graduate Center* on Nott Terrace and Liberty Streets. At the end of 2014 we celebrated our Decennial: 100 years of Excellence in Graduate Education, Ten years at Union Graduate College.

Union Graduate College consists of three graduate schools and a center: the **School of Management** including a program in Healthcare Management and an MBA that also qualifies students to sit for the Accountancy Exam, the **School of Education** with a focus on 4th grade through high school education but also offers masters degrees in the humanities, the **School of Engineering and Computer Science** with programs in electrical, mechanical engineering and engineering management and a new focus on energy, and the **Center for Bioethics and Clinical Leadership** with the only known degree program offering either a focus on clinical or research ethics. Several interdisciplinary degree programs such as in Engineering and Management are also offered.

Whether online or face-to-face, Union Graduate College believes in providing an educational environment characterized by high faculty-student interaction and small class size, excellent programs with the highest levels of accreditation available and successful student outcomes-both graduation and job placement.

Union Graduate College values its Union College heritage and its pivotal contemporary role in Upstate New York and beyond.

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DEGREES/CERTIFICATES OFFERED

School of Education	Degree	HEGIS Code
Adolescence Education: 7 – 12 with specialization possible in: English, French, German, Greek, Latin, Spanish, Chinese, Biology, Chemistry, Earth Science, Physics, Mathematics or Social Studies	MAT	0803
Math and Science Adolescence Education (7 – 12 with specialization possible in: Biology, Chemistry, Earth Science, Physics, Gen Science or Mathematics) (RTTT)	MAT	0899.70
Adolescence Education: 7 – 12 : Life Science	MS	0499
Adolescence Education: 7 – 12 : Math and Technology	MS	1799
Adolescence Education: 7 – 12 : Physical Science	MS	1901
Adolescence Education: K-12 : Technology	MAT	0839.02
Master of Arts in English	MA	1502
Master of Arts in History	MA	2205
Master of Arts in English and History	MA	4901
Core Certification: Adolescence 7 – 12	N/A	0803
Advanced Study in Teacher Leadership and Mentoring	Advanced Certificate	0899
Advanced Study in Teacher Leadership and National Board Certification	Advanced Certificate	0899
Advanced Study in Teacher Leadership and Service Learning	Advanced Certificate	0807
Middle Childhood Extension	Advanced Certificate	0804
School of Engineering and Computer Science	Degree	HEGIS Code
Computer Science	MS	0701
Electrical Engineering	MS	0909
Energy Systems	MS	4904
Engineering and Management Systems	MS	4904
Mechanical Engineering	MS	0910
Business of Energy (online)	Advanced Certificate	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 and Medicine (with Albany Medical College)	MBA	1202
Healthcare Data Analytics	MS	1202
Healthcare Management	Advanced Certificate	1202
Human Resources Management	Advanced Certificate	0515

Management and Leadership	Advanced Certificate	0506
Eight-Year Leadership in Medicine – Healthcare Mgmt (with Union College and Albany Medical College)	MBA	1202
Healthcare Management – Pharm D (with Albany College of Pharmacy & Health Sciences)	MBA	1202
Healthcare Management – BS in Pharm. Sciences (with Albany College of Pharmacy & Health Sciences)	MBA	1202

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

CONTACT INFORMATION

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Schenectady, New York 12308
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School of Education	**(518) 631-9870**
Lynn Gelzheiser, Interim Dean	(518) 631-9870
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Peter Otto, Chair, MS Healthcare Data Analytics	(518) 631-9895
Center for Bioethics & Clinical Leadership	**(518) 631-9860**
Sean Philpott-Jones, Director	(518) 631-9860
Ann Nolte, Assistant Director	(518) 631-9860
Tammy Leone Curtis, Program Assistant	(518) 631-9861

MISSION

Mission
To provide professional master's level programs that equip promising students with the knowledge and competencies employers want and students 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.

Our Goals
Well beyond content expertise, 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 demonstrates 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 Student Learning Outcomes

1. The graduating student will demonstrate <u>disciplinary competence</u>:
    a. S/he will understand the disciplinary material presented in class.
    b. S/he will be able to interpret critical data, material and concepts in the field of study.
2. The graduating student will demonstrate <u>critical thinking</u>:
    a. S/he will be able to define a problem, decision to be made, and/or issue to be analyzed.
    b. S/he will be able to analyze, synthesize and apply important knowledge and concepts to solve problems.
    c. S/he will be able to propose a solution to a problem and evaluate that solution using appropriate criteria.
3. The graduating student will demonstrate <u>effective communication (oral and written) skills</u>:

    a. S/he will be able to use effective oral communication skills that clearly articulate fundamental concepts and knowledge to relevant audiences in their profession.
    b. S/he will be able to use effective written communication skills that clearly articulate fundamental concepts and knowledge to relevant audiences in their profession.
4. The graduating student will <u>demonstrate social/ethical responsibility</u>:
    a. S/he will be able to articulate the rationales for professional and disciplinary codes of ethics within his/her discipline
    b. S/he will be able to apply professional and disciplinary codes of ethics to professional relationships and situations in order to determine whether a course of action is deemed ethical.
    c. S/he will be able to exhibit decision making behaviors based on ethical principles that promote fairness, equity, respect and trust.

ACADEMIC CALENDAR
2014-15

MAY 2014

12 Summer Registration Begins for all terms (ends 5/30 for current students)
16 Potential Make-up date for Memorial Day Closure – see your faculty (Friday)
26 Memorial Day – UGC Closed
30 Summer Registration ends for Current Students

JUNE 2014

1-13 Spring BE On-Site Term
5 Spring classes end (except BE On-site)
9-11 Spring term exams (except BE on-site)
14 Commencement (Location Proctors @ 7pm)
16 School of Management Summer Term 1 begins (ends 7/22)
School of Engineering & Computer Science Summer Term begins (ends 7/23)
18 School of Education Summer Term begins (ends 8/1)
30 Bioethics Summer 6-Week Term starts (ends 8/10)

JULY 2014

1 School of Management Year Long Preliminary Courses Term (ends 6/30/2015) (MBA 001, 002, 003, 004)
4 July 4th – UGC Closed
19 LIM Health & Human Values Term starts (on-site ends 7/30; term ends 8/20)
19-26 Bioethics Pro-Seminar On-Site Term
22 School of Management Summer Term 1 ends
23 School of Management Summer Term 2 begins (ends 8/28) (Note **Wednesday** start)
School of Engineering & Computer Science Summer Term ends

AUGUST 2014

1 School of Education Summer Term ends
10 Bioethics Summer 6-week Term Ends
11-29 Fall Registration (Open House TBD)
14 School of Engineering/Computer Science Summer Term ends
20 LIM Health & Human Values Term Ends (On-site ends 7/30)
28 School of Management Summer Term 2 ends

SEPTEMBER 2014

1 Labor Day Holiday – UGC Closed
4-7 School of Management Healthcare Fall On-Site Term – project continues through fall term (ends 11/25)
10 **Fall term classes begin**
10 Bioethics F/W Project term (ends 3/19/15)

OCTOBER 2014

27 Winter Registration starts (ends 12/17 for current students)

NOVEMBER 2014

18 Fall term classes end

19-25 Fall term exams

26 Winter Break Begins

27-28 Thanksgiving Holiday – UGC Closed

DECEMBER 2014

1 School of Education Seminar Term (only) begins (ends 3/19/15)

17 Winter Registration ends (for current students)

24 Holiday Break begins @ 4:30 pm – UGC Closed (reopens 1/5/15)

JANUARY 2015

1-2 New Year Holiday – UGC Closed

5 **Winter term classes begin** & UGC opens (term ends 3/19/15)

5 Bioethics W/S Project term (ends 6/10/15)

FEBRUARY 2015

23 Spring Registration Begins (ends 3/13 for current students)

27-28 Make up dates for winter term weather closures – **please hold open**

MARCH 2015

1 Make up dates for winter term weather closures – **please hold open**

12 Winter term classes end/School of Education Seminar Term Ends

13 Spring Registration ends (for current students)

16-19 Winter term exams

20 Spring break begins

26-29 School of Management Healthcare Fall On-Site Term – project continues through spring term

30 **Spring Term classes begins**

APRIL 2015

MAY 2015

11 Summer Registration Begins for all terms (ends 5/29 for current students)

15 Potential Make-up date for Memorial Day Closure – see your faculty (Friday)

25 Memorial Day – UGC Closed

29 Summer Registration Ends for Current Students

31 Be On-Site Term begins

JUNE 2015

1-12 BE On-Site Term (started 5/31)

5 Spring classes end (except BE On-site)

8-10 Spring term exams (except BE On-site)

13 Commencement (Location: Proctors @ 10 am)

30 School of Management Year Long Prerequisite Term Ends @ 10 am) @ 10 am) (MBA 001, 002, 003, 004) Note: A new year long will start 7/1/15.

Holidays: The College is closed for business:

- New Years Day (and 1/2/15)
- Memorial Day
- July 4th
- Labor Day
- Thanksgiving/Day following
- Christmas
- Days between Christmas and New Years

Student Services Office Hours

During Term:
M-Th 8:00 am – 6:30 pm
Fri 8:00 am – 4:30 pm

Summer & Non-Term:
M-F 8:00 am – 4:30 pm

Student Access to Building – please refer to website each term.

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 both face-to-face and online are generally made by 2:00 pm for late afternoon courses and by 4:00 pm for evening classes. Notice will be posted at www.uniongraduatecollege.edu. There may be instances that only classes starting after a certain hour are cancelled. Delayed opening of offices will be noted on our website. When appropriate the emergency text message system will be used.

Religious Observances

Classes will be held; students observing holidays should contact their professors in advance to make up work and/or exams.

Academic Terms Description:

Term	Typical Dates
YEAR LONG	
SOM Preliminary Courses	July 1 – June 30
SUMMER	
SOM Summer Term 1	Mid June – Late July
SOM Summer Term 2	Late July – Late August
SOECS	Mid June – Late July
SOEduc	Mid June – Early August
BE Summer 6 week	Late June – Early August
BE Pro-Seminar Onsite	Late July for 8 days
LIM H&H Values	Late July – Late August
FALL	
SOM Healthcare Onsite	Early September 3 days onsite *(project continues online)*
UGC Fall Term	Early September – Late November *(Note: Most courses for all schools within this term)*
BE F/W Project Term	Early September – Late March
WINTER	
SOEduc Seminar Term	Early December – Late March
Winter Term	Early January – Late March *(Note: Most courses for all schools within this term)*
BE W/S Project Term	Early January – Late May
SPRING	
SOM Healthcare Onsite	Late March 3 days onsite *(Project continues online)*
Spring Term	Late March – Mid June *(Note: Most courses for all schools within this term)*
BE Onsite Term	Mid June – 8 days onsite

PROGRAMS AND ADVISORS

Student Services
(518) 631-9910 FAX: (518) 631-9901

School of Education
(518) 631-9870 FAX: (518) 631-9903

School of Engineering and Computer Science
(518) 631-9881 FAX (518) 631-9902

School of Management
(518) 631-9890 FAX: (518) 631-9902

Center for Bioethics and Clinical Leadership
(518) 631-9860 FAX (518) 631-9903

School of Education

All	Lynn M. Gelzheiser	631-9870/ gelzheiL@uniongraduatecollege.edu

School of Engineering and Computer Science

All	Robert J. Kozik	631-9881/ kozikr@uniongraduatecollege.edu

School of Management

Non-matriculated (while applying-not admitted to date) Students
Non-degree Students

All Programs	Mel Chudzik	631-9889/ chudzikm@uniongraduatecollege.edu

MBA- Management (Admitted/Matriculated)

Full-Time:	A-F	Jay Carlson	631-9888/ carlsonj@uniongraduatecollege.edu
	G-O	Zhilan Feng	631-9891/ fengz@uniongraduatecollege.edu
	P-Z	Rudy Nydegger	631-9894/ nydegger@uniongraduatecollege.edu
w/Actg Focus		John DeJoy	631-9985/ Dejoyj@uniongraduatecollege.edu
Part-time:		Alan Bowman	631-9887/ bowmana@uniongraduatecollege.edu
Accelerated (5 yr):		Jim Lambrinos	631-9893/ lambrinj@uniongraduatecollege.edu
Int'l Exchange (J1)		Mel Chudzik	631-9889/ chudzikm@uniongraduatecollege.edu
Int'l (F1)		Peter Otto	631-9895/ ottop@uniongraduatecollege.edu

MBA-Health Students (Admitted/Matriculated)

Full-time:	Jim Lambrinos	631-9893/ lambrinj@uniongraduatecollege.edu
Part-time:	Martin Strosberg	631-9896/ strosbem@uniongraduatecollege.edu
Accelerated (5 yr):	Jim Lambrinos	631-9839/ lambrinj@uniongraduatecollege.edu
Int'l Exchange (J1)	Mel Chudzik	631-9889/ chudzikm@uniongraduatecollege.edu
Int'l (F1)	Martin Strosberg	631-9896/ strosbem@uniongraduatecollege.edu
Accounting:	John DeJoy	631-9885/ dejoyj@uniongraduatecollege.edu

Law Students (Admitted/Matriculated)

JD/MBA Health:	Peter Otto	631-9895/ ottop@uniongraduatecollege.edu
JD/MBA:	Alan Bowman	631-9887/ bowmana@uniongraduatecollege.edu

Pharmacy & MD/MBA Students (Admitted/Matriculated)

MBA:	John Huppertz	631-9892/ huppertj@uniongraduatecollege.edu

8 Year Med

MS/MBA :	John Huppertz	631-9892/ huppertj@uniongraduatecollege.edu

MS Healthcare Data Analytics

All	Peter Otto	631-9895/ ottop@uniongraduatecollege.edu

Certificates

Healthcare Mgmt	John Huppertz	631-9892/ huppertj@uniongraduatecollege.edu
Human Resources	Michele Paludi	631-9890/ paludim@uniongraduatecollege.edu
Mgmt./Leadership	Michele Paludi	631-9890/ paludim@uniongraduatecollege.edu

Center for Bioethics and Clinical Leadership

MS-CE	Robert Baker	631-9860/ bakerr@uniongraduatecollege.edu
MS-RE	Sean Philpott-Jones	631-9863/ philpots@uniongraduatecollege.edu
MS-Policy	Michelle Meyer	631-9862/ meyerm@uniongraduatecollege.edu
MS CL	Joanne Fitzgerald	631-9842/ fitzgerj@uniongraduatecollege.edu
MS CL-Pharmacy	John Huppertz	631-9892/ huppertj@uniongraduatecollege.edu
MS LIM	Ann Nolte	631-9860/ noltea@uniongraduatecollege.edu
Certificates	Ann Nolte	631-9860/ noltea@uniongraduatecollege.edu

GENERAL ACADEMIC AND PROGRAM INFORMATION

Union Graduate College is located at 80 Nott Terrace in Schenectady, NY at the corner of Nott Terrace and Liberty Street. The majority of classes are held at the UGC Graduate Center and on the Union Campus.

ACADEMIC ADVISEMENT

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. Your offer of admission letter will assign you an academic advisor. A list of advisors can be found in the Program/Advisor section of the catalog.

Students must seek permission from the faculty member to audio or video record a class.

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, three day on-sites for MS Healthcare Data Analytics and MBA Healthcare, a one-week on-site course for Bioethics and one six to ten week session for other programs (Education/Engineering-Computer Science/Bioethics). The Academic year starts with the beginning of the summer sessions and concludes with the spring semester. Under this system each full course equates to 3 1/3 semester hours. In converting to minutes each class uses between 2000 and 2400 minutes of in-class instruction. Please refer to the "Academic Term Description" page in this catalog for more details.

Full-time course load requires a minimum of two full courses per term, totaling six courses during fall, winter and spring terms. Full and part-time load are calculated on credit bearing courses only. A typical trimester course load is three courses per term during fall, winter and spring terms.

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. See each program below for limit of < 3.0 grades in coursework.

ACCREDITATION AND CHARTER

Union Graduate College is fully accredited by Middle States Association of Colleges and Secondary Schools. It was initially 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. Less than 30 percent of all business programs are AACSB accredited nationwide. Union Graduate College's program is unique in being one of only 28 AACSB accredited programs that focus solely on graduate degrees. The Commission on Accreditation of Healthcare Management Education (CAHME) and AACSB-International dually accredit the MBA in Healthcare Management and MS in Healthcare Data Analytics programs. Less than 30 MBA programs in the country are dually accredited by these agencies.

The MAT is accredited by the Teacher Education Accreditation Council. It was the first New York State education program to be accredited by TEAC. It has more National Board Certified instructors than any other school of Education in New York State.

Contact information for these accrediting bodies is available on the following websites:

Middle States:
http://www.msche.org/documents/How-to-file-a-Complaint-with-the-Commission.pdf

AACSB:
http://www.aacsb.edu/accreditation/staff.asp

TEAC:
http://www.teac.org/accreditation/comment-to-members-and-programs/teac-comment-policy/

CAHME:
http://www.cahme.org/Contact.html

NYS:
http://www.highered.nysed.gov/ocue/accred/handbook/directory.htm

Contact information for State Approval Complaint Processes by State:
http://wcet.wiche.edu/advance/state-approval-complaint

COURSE LOAD STATUS: FULL/PART TIME

All programs can be completed on a full-time or part-time basis.

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

GRADUATION/COMMENCMENT

Union Graduate College holds one commencement ceremony in June. If program requirements are met, students can be awarded a diploma in December or June. Degree students who are within two courses of completing their degree requirements may participate in the June commencement ceremony. December graduation requires an October 1 filing date and June graduation requires a February 1 filing date.

IMMUNIZATIONS

Students are required to submit immunizations records if they plan to take two or more on-site classes a term, regardless of full or part time status. The immunization form is available in the Student Services Office, on the student portal, and on the UGC 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 a signed immunization form. A completed immunization form must be submitted to the Student Services Office prior to course registration.

Students whose religious beliefs prohibit immunization, or for whom immunizations pose a health risk, will be required to submit a statement in support of their request for a waiver.

All students attending New York State colleges and universities, whose birth date is on or after January 1, 1957, are required to show proof of immunity against measles, mumps, and rubella. A meningococcal meningitis immunization form (signed waiver) and a T.B. screening form are required.

INTENT TO ENROLL/RESOURCE FEE

All degree programs require a response form and a $450 resource fee to secure a place in the class. All certificate programs require a response form and a $175 resource fee to secure their place. LIM (Leadership in Medicine) students pay a $100 fee when their coursework at Union is complete. 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, computer resources, library access, student government, student activities, all graduation fees and regalia, diploma, and free transcripts for life. There is no refund if you don't use a service or don't participate in commencement ceremony.

LEAVE OF ABSENCE - VOLUNTARY

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. If receiving financial aid please be sure to notify the Financial Aid office and verify any dates that may affect loan deferments.

LEAVE OF ABSENCE - INVOLUNTARY

Union Graduate College may place a student on an involuntary leave of absence when the student exhibits behavior that harms or threatens to harm the health or safety of the student, that harms or threatens to harm the health or safety of others, or that significantly disrupts the educational or other activities of the College or its community. When a student exhibits behavior that causes concern as described above, the matter shall be brought to the attention of the President of the College. Based on the available information, the President will make a decision as to whether to impose an involuntary leave of absence on the student and, if so, the conditions of the leave of absence. The decision of the President will be conveyed to the student in writing as soon as practical after the leave is imposed.

Prior to imposing any involuntary leave of absence on a student, the President will notify the student, if possible, that consideration is being given to placing the student on a leave of absence. When reasonably possible, the student also will be afforded the opportunity to provide information to the President with respect to the matter. Notwithstanding the foregoing, if the President in his or her sole discretion believes that there is an imminent risk to the health or safety of the student or to others or to disruption to the College, the President may take immediate action to place a student on an involuntary leave of absence without first notifying the student pending a final determination of the matter.

This involuntary leave of absence policy is independent of and does not preclude the use of any other policy or procedure of the College with respect to discipline or other action taken with respect to the student.

NON-DEGREE STUDENTS

Students who are not planning to work toward a degree must submit the first page of the non-degree application, unofficial college transcripts, and an immunization form (if taking two or more courses per term on-site). 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. There is a limit of two non-degree classes for the School of Education and three non-degree classes for all other programs All academic grade policies regarding C's and F's apply to non-degree students, see academic standing in this catalog.

NON-MATRICULATED STATUS

All degreed and certificate programs allow non-matriculated students. This allows qualified students to start course work while completing the application. 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 seek permission from the dean or the school's admission committee to waive the 2.7 requirement for non-matriculated course work and will require Academic Committee approval for official admission. There is a limit of two non-matriculated courses for the MAT degrees and all certificate programs. All other degree programs have a limit of three non-matriculated courses. 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 prior to an admissions decision.

ONLINE COURSE-STUDENT VERIFICATION

Student Verification Process:

The Bioethics Program of Union Graduate College- Icahn School of Medicine at Mount Sinai Distance Education.

This is a hybrid program that uses both on-site and online instruction, exams and capstones. Prior to acceptance, students are admitted on the basis of official transcripts and letters of recommendations, sometimes supplemented by phone or on-site interviews. Students will secure a UGC photo identification card, a unique identification number, and secure passwords to log into the UGC portal and UGC online courses. Online examinations require passwords for access and are time limited. Exams are secure in the sense that they cannot be printed or minimized (to go to another screen) without the test freezing and becoming invalid. Instructors receive notification of attempts to tamper with online examinations. Projects are mentored either on-site or through frequent e-mail exchanges and phone calls. Final practica for skills certification are conducted on-site, as is the capstone course at which students present projects and are examined in a proctored setting to directly observe and verify the acquisition of core skills and knowledge prior to being awarded a degree

The School of Management

The SOM has the same policies, minus the exam controls. Online programs also have at least one in-person session to directly observe and verify the acquisition of course objectives.

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, energy systems, engineering and management systems, and healthcare data analytics. The Master of Arts is awarded in Teaching, History, English, and History and English. 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"**).

Degree 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 and Energy Systems requires eleven courses.
- The Master of Science degrees in Electrical Engineering, Mechanical Engineering, and Computer Science require between nine and ten credit bearing courses.
- The Master of Science for Teachers degree requires a minimum of eleven courses, including master's level research/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 Health Management requires twelve courses
- The Master of Science in Healthcare Data Analytics requires twelve courses

MA Program

The MA degrees offered by the School of Education require the completion of 11 courses. Master's level research work is a requirement.

MAT Program

A minimum of one academic year of coursework, an internship and master's level research work is required. This is equivalent to 16 courses.

MBA Program

The MBA degrees offered by the School of Management require the completion of 17 courses. Students without professional work experience are required to do a 400-hour internship.

Certificate Programs

School of Education

Certificate of Advanced Study Programs

- Certificate of Advanced Study in Teacher Leadership and Mentoring (5 course program)
- Certificate of Advanced Study in Teacher Leadership and National Board Certification (4 course program)
- Certificate of Advanced Study in Teacher Leadership and Service Learning (4 course program)

School of Engineering and Computer Science

- Certificate of Advanced Study in Business of Energy (online 4-course program)

School of Management

The School of Management offers three advanced certificates:

- Healthcare Management
- Human Resource Management
- Management and Leadership

These are six-course programs, and four of the courses may be applied toward an MBA. 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 three certificates:

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

These are four-course programs, and may be applied toward the MS in Bioethics.

EXTENSION PROGRAMS

School of Education

- Middle Childhood Extension (grades 5-6)

This is a two-course extension program which extends a teacher's licensure to fifth and sixth grade in the discipline of original certification. Focused study of pedagogy, literacy and age-specific learning needs prepare teachers for this 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 and Siena undergraduate students who want to enter combined bachelor's-master's degree programs must apply for and be granted admission to Union Graduate College no later than the end of the fall term of their senior year. Students are encouraged to apply as early as the end of 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. A cumulative grade point average of 3.0 (3.25 for MAT program) is expected for most programs.

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.

Other College Joint Programs

Union Graduate College also offers opportunities for joint degrees with SUNY Albany, Icahn School of Medicine at Mount Sinai and the following Union University institutions: Albany Medical College, Albany Law School, and Albany College of Pharmacy and Health Sciences. For specific degrees/programs offered, see the "Degrees / Certificates Offered" chart shown previously in this section.

THESIS REQUIREMENTS

A UGC thesis is a two-course thesis and is generally completed over two terms. At the conclusion of the first term a grade of pass or fail is awarded. 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. When the thesis is complete a grade is submitted and that grade will carry double credit. Fully satisfying the thesis requirement, requires more than grade submission. To fully meet the thesis requirement, you must also present (defend) your thesis, electronically file your thesis, and submit the required cover page with original signatures. Please contact the Registrar's office for the requirements and mechanics for a UGC thesis. There are strict deadlines for completion of a thesis that have an impact on a student's graduation.

TRANSFER CREDIT/COURSE WAIVERS

Prior course work is reviewed for potential transfer and/or waivers. For specific requirements see the program descriptions in this catalog. The student may decline any pre-approved waivers/transfers by notifying the Registrar in writing.

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 submit their request in writing to the Registrar or their academic advisor. Course outlines and descriptions to complete these reviews may be required. The Director will request

that review, and notify the student of the results. For information on specific rules, visit the school's program page.

STUDENT SERIVCES

ALUMNI RELATIONS (518) 631-9852

Union Graduate College's Alumni Relations Director, Melissa Guiry, serves as a liaison between the college and its growing alumni network. Alumni are encouraged to attend events, serve as mentors, and assist the Golub Career Center by passing along information about job and internship opportunities for current students and fellow alumni. Alumni are also encouraged to keep UGC informed of news and accomplishments, both personal and professional, by contacting alumni@uniongraduatecollege.edu or visiting our alumni web pages at www.uniongraduatecollege.edu. This information is generally published in our newsletter, Vision and electronic alumni newsletter.

Union Graduate College graduate alumni may return to take two additional courses at a reduced rate of 50% of the current full tuition. These courses cannot be used toward completion of another degree, certificate or extension program registered with New York State. This discount cannot be applied to already discounted courses. It is provided solely as an opportunity for alumni to expand or update their knowledge base within their current field of study.

BOOKSTORE OF UNION COLLEGE

Reamer Campus Center (518) 388-6188

The Union College Bookstore provides Union Graduate students the tools needed to achieve academic excellence. The textbook department now has many books available for rental, as well as a price comparison feature on our website www.bookstore.union.edu to transport shoppers directly to online sources when those prices are significantly better (keeping in mind that our titles will always be the correct versions in time for class!). We provide special evening hours for book buyback during finals week to our graduate students to accommodate their busy schedules. We are also an Authorized Apple Campus Reseller for your entire Apple computer needs, not to mention many peripherals and accessories. Our Convenience Store is open until 11:00 pm every day for beverages, snacks and frozen meals, as well as for magazines and general reading books. The staff is always happy to accommodate any special needs required.

CAMPUS SAFETY

Emergencies: **911**

Non-Emergency Requests: **During Business Hours: (518)631-9910**
During extended hours: (518)466-0519

GRADUATE CENTER:

The Graduate Center is staffed with Campus Safety Officers during most weekday evenings and partially during the weekends. The purpose is to provide students with a safe environment for studying during extended, non-business hours. Students will have access to the Graduate Center during business hours and extended hours when a Campus

Safety Officer is on duty. Students may be required to show a valid Union Graduate College ID. Union Graduate College ID cards are issued from the Student Services Offices at 80 Nott Terrace. Student access hours are posted on the UGC website each term. ID cards can be issued once a student is registered and are active the first day of class.

Walking
Union Graduate College safety officer will escort students and employees to the parking lot after dark.

The Union Graduate College crime log is posted in room 105A. If you would like to see it please go to Student Services.

UNION COLLEGE CAMPUS:
Union Graduate College offers many classes on the Union College campus. The Campus Safety Office is located at the Inn at College Park and provides safety services for Union Graduate College students while on the Union College campus.

Union 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 (518-388-6911 or 518-388-6178). 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; lost and found; student escorts; student access to rooms, and response to problems involving safety and security of students, faculty and staff.

Walking:
The walking escort service is designed to ensure personal safety primarily at night, when students may be walking alone to return to their cars, residence or office. In addition to officer escorts, Campus Safety has a group of students who provide escorts for the campus community. Walking escorts are available by phone and often stationed in the library or college center. Call (518)-388-6386.

The Union College campus 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

THE LEWIS AND COLLEEN GOLUB CAREER CENTER (518) 631-9851

Located on the first floor of the Graduate Center, the Golub Career Center 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:

- Critiquing student resumes, cover letters and other job search correspondence;
- Assisting with job and internship search strategies;
- Developing professional career action plans;
- Providing feedback on interviewing and networking skills;
- Negotiating assistance with salary and job offers.

Contact the Coordinator of Career Services, Jane Fleury at fleuryj@uniongraduatecollege.edu.

Director of Annual Giving & Alumni Relations Melissa Guiry, is also available to assist students with making alumni connections. To schedule an appointment, contact her at guirym@uniongraduatecollege.edu

In addition, the Golub Career Center 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 "Golub Career Center," or contact the Coordinator of Career Services, at careers@uniongraduatecollege.edu

CLASSROOMS:

Union Graduate College uses both Graduate Center classrooms and Union College classrooms. Please check the website before your first class for last minute room changes.

Classroom Abbreviations:

GCTR	**Graduate Center** (80 Nott Terrace)

Union College Campus:

BAIL	Bailey Hall
HUMN	Humanities Building
LIPM	Lippman Building (closed for renovation)
NWSE	NW Wing of Sci & Engrg
OLIN	Olin Building
STZH	Steinmetz Hall
SWSE	SW Wing of Sci & Engrg
WLDC	Peter Irving Wold Building

Off Site Locations

AMC MS	Albany Medical College Medical Science Building
MSSM	Icahn School of Medicine at Mount Sinai
IROQ	Iroquois Middle School
SCHH	Schenectady High School

CLERY ACT:

Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act

The Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act is the landmark federal law, originally known as the Campus Security Act, which requires colleges and universities across the United States to disclose information about crime on and around their campuses. Because the law is tied to participation in federal student financial aid programs, it applies to most public and private institutions of higher education. It is enforced by the U.S. Department of Education. According to this law:

- Schools must publish an annual report disclosing campus security policies and three years worth of selected crime statistics;
- Schools must make timely warnings to the campus community about crimes that pose an ongoing threat to students and employees;
- Each institution with a police or security department must have a public crime log;
- The U.S. Department of Education centrally collects and disseminates the crime statistics;
- Campus victims are assured of certain basic rights; and
- Schools that fail to comply can be fined by the Department of Education.

Note: The UGC public crime log can be found in the Safety Director's office located in Student Services.

The Campus Safety and Risk Committee will provide upon request all campus crime statistics as reported to the United States Department of Education. The Graduate College, through the Director of Institutional Research who is the campus contact at the Graduate College for such statistics, shall provide hard copy of crime statistics within 10 days of a request.

Union Graduate College will, without delay, and taking into account the safety of the UGC community, determine the content of an emergency notification and initiate the notification system, unless issuing a notification will compromise efforts to contain, respond to, or otherwise mitigate the emergency.

Union Graduate College Annual Security and Fire Safety Report can be found at: http://www.uniongraduatecollege.edu/pdf/students/safety/clery.pdf

Emergency: 911

Union Graduate College Non-Emergency: (518)631-9910
Union College Non-Emergency: (518)388-6911 or (518)388-6178

COMPUTING:

Graduate Center Laboratory
The Graduate Student Computer Laboratory is located on the lower level of the Graduate Center. It includes 8 Windows workstations. Five additional computers are located in student meeting areas. Laser printers are provided for student use. Applications on the lab's machines include:

- Analysis applications: JMP statistical software and SPSS
- Course-specific applications: Mat lab
- Databases: Access
- Presentation packages: PowerPoint, Visio
- Spreadsheets: Excel
- Word processing: Word
- Audio and Video capture and editing software
- Internet: Internet Explorer, Google Chrome browsers

Network Infrastructure:
Union Graduate College's main network connects all computers and phones located in the Graduate Center. Union Graduate College has also established a wireless network in the Graduate Center throughout the building.

Lap-top Loaner Program
A laptop loaner program allows students to use a Windows laptop anywhere within the building. Up to seven laptops are available to students or faculty and include the same software as workstations in the Computer Laboratory. You can secure one, if available, at Student Services during normal business hours. Laptop loaners are not to leave the building. You can reserve laptops at the Admissions/Student Services office.

Online 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 hybrid, predominantly online degree program, and contains short on-campus components.

Union Graduate College uses the Moodle Rooms 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.

COPY CENTER

Union College Reamer Campus Center Room 102 (518) 388-6640

Hours: 8:30 am - 4:00 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, large format posters, all types of digital printing and more. If you have a special project or needs call us at 518-388-6640.

DINING FACILITIES

Microwaves, coffee brewers and vending machines are available in the Graduate Center. Several restaurants are located within a short walk, including Denny's next door. Dutch Hollow, located on the Union College campus 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. Monday through Thursday. Another popular spot is the Rathskellar, opened by students in the 1950s and located in the basement of Old Chapel. Hours are: Tuesday through Friday 11:00 am to 7:30 pm, Friday and Saturday late night – 9:00 pm to 1:00 am. There is a Starbucks in the Wold building Monday – Thursday 7:30 am – 8:00 pm and Friday 7:30 am – 4:00 pm during fall, winter & spring terms. A sushi bar is located at Reamer Center 1st floor Monday – Friday 11:00 am – 9:00 pm. Please see "union.edu" for other dining spots on the Union campus.

DISABILITY ACCOMMODATIONS

Students with Disabilities Policy

Union Graduate College is committed to protecting students with disabilities from discrimination in any form and to promoting access to educational opportunities for all of its students. Thus, the Graduate College will provide academic adjustments to qualifying students as required by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990.

An individual with a disability may request a reasonable accommodation when she or he knows that there is an educational barrier that is preventing her or him, due to a disability, from effectively performing his or her studies. Union Graduate College recommends that an individual requests a reasonable accommodation before his/her performance suffers or conduct problems occur. A "disability" is defined as a physical or mental impairment that substantially limits one or more major life activities of an individual, who has a record of such impairment, or is regarded as having such impairment.

Together with the request for accommodation, the student seeking accommodation must submit documentation of disability. The documentation must support the accommodation request by demonstrating by the opinion of a qualified healthcare provider that the

student requesting accommodation has a physical, mental or learning impairment which substantially limits a major life activity and sets forth the nature, manner and duration of that limitation. This documentation generally must be within the last 24 months. The College reserves the right to require further evaluation.

This opinion of the qualified healthcare provider must reflect the student's present level of functioning of his/her major life activity affected by the disability. The opinion of the qualified healthcare provider must also provide detailed data that support the requests for any reasonable accommodation.

Applicants or students must pay the cost of obtaining the professional opinion of the qualified healthcare provider. The Graduate College has the discretion to require supplemental assessment of a disability. If the Graduate College requires an additional assessment for purposes of obtaining a second professional opinion, then the College shall bear any cost not covered by any third party.

While a student can request a particular type of accommodation, it is the College that determines how to meet a particular need. Therefore, alternative accommodations may be provided that are more cost effective or efficient than those requested by the student seeking accommodation.

An applicant or student must request a reasonable accommodation by contacting the Graduate College Registrar. Academic adjustments will be provided to the extent that the modification does not fundamentally alter the nature of a service, program or activity or would result in undue financial or administrative burdens. Written notification of the Graduate College's decision will be mailed to the student. The decision can be appealed within ten days by submitting a written request to the President. The President's decision will be communicated to the student. There will be no further appeal.

Each term, the Registrar will communicate via letter to the student's teaching faculty & academic advisor what accommodations are approved. It is then the student's responsibility to contact the faculty to discuss.

HEALTH INSURANCE - STUDENT

Student Services

(518) 631-9830

All full-time students are required to have health insurance. Each year, all full-time students are required to go to www.gallagherkoster.com and click on Student Access and select Union Graduate College from the drop down menu. Students will either enroll or waive insurance coverage prior to their first term of study and each year following that. Information may be obtained at www.uniongraduatecollege.edu. Students, who have a current health insurance, including Medicaid, should process the waiver request online.

If students change their 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.

LOCAL HOSPITALS

Ellis Hospital: 1101 Nott Street
Schenectady, NY 12308
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) 243-1500

URGENT CARE LOCATIONS:

Newton Medical- Albany: 1662 Central Ave. Suite 1
Albany, NY 12205
Open: Mon - Fri: 9AM - 7PM Sat and Sun: 9AM - 5PM
Phone: (518) 869-9692

Newton Medical- Latham: 588 New Loudon Road #4
Latham, NY 12110
Open: Mon - Fri: 9AM - 7PM
Phone: (518) 785-2662

Hometown Health Center: 1044 State Street
Schenectady, NY 12307
Open: Mon, Wed, Thur, Fri: 8AM-5:30PM, Tue: 8AM-7PM,
Sat: 8:30AM-1PM
Phone: (518) 370-1441

LOCATIONS FOR IMMUNIZATIONS:

Ellis Health Center (Located on the 1st Fl. in Cushing Center at Ellis Health Center (600 McClellan St.)
(Ob-Gyn and Primary care)
624 McClellan St.
Open: M-F 7am-4pm
Phone Number: (518)-243-3333
Immunization charges: MMR and PPD prices vary (**Must call ahead of time)**

GRADUATE STUDENT ASSISTANCE PROGRAM:

Please contact The Wellness Corporation at 1-800-326-6142
24 hours a day, 7 days a week
Help with: Anxiety/Stress/Depression
Anger Management
Drug or Alcohol Abuse
Abusive Relationships
Home Life-School-Work Balance

A classmate with any of these concerns

ID Cards

ID Cards are issued to all members of Union Graduate College Community. This is done to identify you as a member of the community and as proof of your authorization to be on campus and have access to the Graduate Center. You must carry your ID card with you and will be required to produce it upon request by a member of the Campus Safety Department or other authorized agents of Union College and the Graduate College. Refusal or failure to produce your ID card may result in Student Disciplinary charges.

ID cards may be obtained in the Student Services Office located on the 1st floor, during business hours. ID cards are effective the first day of the first class. In preparation for your first term you may email a head shot jpg format file to studentservices@uniongraduatecollege.edu to request that your card be prepared in advance.

The cost to replace a lost ID card is $25.

LIBRARIES:

Union Graduate College has its own online library. Students and faculty may access online databases of information, such as professional journal articles, directly from our website. You can select the Library link in the navigation bar of the website, and then follow links directly into the databases. On campus use does not require a password. To access these databases remotely, use the same username that you use for accessing our online coursework software interface, Joule, and your password, which is your UGC ID number.

Both print and electronic resources of Union College's Schaffer Library are available to you from Union's campus. You can access all of Schaffer Library's online databases by visiting the Library.

UGC students and faculty may borrow books (and other media) directly from Schaffer as follows:

- You obtain a Direct Access Program card from Tom McFadden, the Director of Library Services (library@uniongraduatecollege.edu)
- Bring the DAP card to Schaffer Library, along with your UGC ID
- The circulation staff will register you as a borrower.
- You will then be able to borrow items directly from Schaffer Library.

Union College's Schaffer Library
Hours: 8 am - 2 am, Monday – Thursday
8 am - 10 pm, Friday
10 am - 10 pm, Saturday
10 am - 2 pm, Sunday

(Special hours posted for examination and vacation periods.)

School of Education Library
The School of Education's Curriculum Library (located in the basement of The 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.

PARKING POLICY/TRAFFIC REGULATIONS/VEHICLE REGISTRATION

Students may park in the Graduate Center parking lot during business and extended hours. No long-term parking is permitted. Students do not need a parking permit for the Graduate Center lot however they may be asked to present a valid Union Graduate College ID. If you must leave your car overnight, please email Bill Carhide at carhidew@uniongraduatecollege.edu.

While parking on the Union College campus, Union College parking rules are enforced. The parking policy and traffic regulations apply to anyone who has a car on the Union campus. This includes students, faculty, staff and visitors. Parking decals are required, please see Vehicle Registration annually. 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.

Vehicle Registration – Union Campus:
To register on the Union Campus (required if you use their parking while attending courses held on the campus):

- Go to Campus Safety at The Inn (near corner of Nott and Erie)
- Complete Vehicle Registration form

- Bring copy of car registration
- Bring driver's license
- Pay $15 annual fee (check to Union College or Cash)

STUDENT SERVICES – Admissions & Registrar

Erin Wheeler, Director of Admissions & Student Recruitment (518) 631-9850
Rhonda Sheehan, Registrar and Director of Academic Affairs (518) 631-9835

Student Services handles all matters dealing with admissions, registration, class schedules, grades, academic records, graduation, international student services, disability accommodations/academic adjustments, commencement, veteran's affairs, and certification of attendance or eligibility in such areas as veterans' benefits, government loan deferment, insurance, and other policy issues. Student Services is located on the first floor of the Graduate Center.

ADMISSIONS INFORMATION

Office Hours:

During Term:
M-Th 8:00 am – 6:30 pm
Fri 8:00 am – 4:30 pm

Summer & Non-Term:
M-F 8:00 am – 4:30 pm

Union Graduate College's Student Services office has a friendly and helpful staff waiting to assist students through the application process. We welcome applications for both full- and part-time applicants. The office, which is located on the first floor of the Graduate Center, oversees all admissions, registration, disability accommodation requests and graduation processes.

CONTACT INFORMATION

Erin Wheeler (518) 631-9850
Director of Admissions and Student Recruitment

Michael Jones (518) 631-9838
Associate Director of Admissions

Diane Trzaskos (518) 631-9837
Coordinator of Admissions

Admissions (518) 631-9831

GENERAL REQUIREMENTS FOR ADMISSION

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. ACPHS students must submit a transcript as evidence of candidacy for the Pharmacy Doctorate program at ACPHS. ACPHS does not award an undergraduate degree to PharmD candidates. A grade point average of "B" (3.0 cumulative index) or better in previous undergraduate and graduate work is expected for admission. The Admission Committee 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. All admission decisions are final. For GPA's <2.7, please refer to the Academic Committee Section of this catalog.

APPLICATION – FILING DATES

Accepted on a rolling basis throughout the year:

- Master of Arts in Teaching (Part-time)
- Master of Arts (History, English or History/English)
- 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
- Master of Science in Energy Systems
- Master of Business Administration
- Master of Business Administration in Healthcare Management
- Master of Science in Clinical Leadership
- Master of Science in Healthcare Data Analytics
- Joint MBA/MS programs with Albany Law School
- Joint MBA/MS programs with Albany College of Pharmacy
- Joint MD/MBA with Albany Medical College
- Certificate Programs *(Exception: Current MBA students interested in a certificate must submit a completed certificate program application, along with the $75 application fee, prior to the first week of their last term prior to expected graduation)*

March 1st Recommended Filing Date:

- Master of Arts for Teaching (Full-time only)
- 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.

June 1st Recommended Filing Date:

- MS Bioethics

Union College Combined Degree – Required to file an 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.

APPLICATION MATERIALS REQUIRED

1. Application
2. Application fee of $75*
3. All official college transcripts
4. Letters of recommendation (see recommendations section)**:
5. Testing (see testing section below in this section)
6. Essay (see program application on web for essay instructions)
7. Resume

8. Interviews (required for the MAT and MST programs and 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) and a TOEFL or IELTS official result. See "International Applicants" for further information.
10. All joint program students are required to submit a copy of their admission's letter from the other college if they have not started that joint program.

*The application fee is waived for Union Graduate College alumni, Union College and Siena College current students 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 and Albany Medical College MD/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.

After all required application materials are 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.

Note: Applying to an MBA after certificate requires:

- GMAT
- Application & fee

Applying to an MBA after MS requires:

- GMAT or petition to waive
- Application & fee
- Updated transcripts

Application: Prospective students can submit an application via the web at uniongraduatecollege.edu. The application can also be downloaded in print format from our website www.uniongraduatecollege.edu. Students can also speak to an admissions representative by calling (518) 631-9831.

Application Fee: $75 for all certificate and degree-seeking applicants. Union Graduate College alumni, Union College and Siena College current students 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: All 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). An official transcript indicating your undergraduate degree award is required. International students please refer to "International Applicants" section of this catalog.

Recommendations: Two letters of recommendation are required for the School of Management and the School of Engineering and Computer Science. Three recommendations are required for the School of Education and the Center for Bioethics. Within the School of Management the MD/MBA and the JD/MBA applicants are not required to submit recommendation letters but they may be requested. The School of Education program requires that two of the letters be academic faculty familiar with the student's academic ability. The preferred format is UGC's official form available on the website or at admissions offices. A recommendation letter, not using official form, may also be accepted.

Testing: The MBA programs require the GMAT or GRE exam. Standardized tests are not required for MS Degrees, MA degrees, MAT degrees and certificates but may be requested when deemed necessary by the College.

GMAT: Either the Graduate Management Admissions Test (GMAT) or the (GRE) is required for applicants to the MBA programs.

- Joint applicants from Union College or Siena College for the MBA program may waive the testing requirement 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 testing requirement is not required for students with a cumulative GPA of 3.5 or above.
- Students with advanced degrees may request consideration for a testing requirement waiver by writing to the Director of Admissions.
- Joint applicants from Albany Law School may waive the GMAT if they submit their LSAT (such applicants should have a copy of LSATs and Albany Law School transcripts sent by ALS to Union Graduate College).
- Joint MS in Clinical Leadership or MBA with Albany College of Pharmacy applicants must submit the GMAT, MCAT or PCAT for admissions. ACPHS students with a 3.2 GPA may waive the testing requirement

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
GRE Codes	2920	

- Note: The GMAT or GRE is required for most School of Management scholarship opportunities.

Admission without GMAT: Any student with at least a 3.0 GPA in their undergraduate studies or at least 5 years of relevant professional experience may indicate that they wish to be considered for the "No-GMAT" path to admission. A written or email request should be submitted to the Director of Admissions. Once the file is complete (other than

testing) it can be sent to the Admissions Committee. If the Admissions Committee approves the request, the Committee may designate up to three courses for the student to take. The classes will typically be traditional beginning required classes, will not duplicate the applicant's prior educational course work, and will allow an assessment of both quantitative and qualitative abilities. The Management advisor and the Registrar will monitor progress each term. If the courses are completed in accordance with criteria on probationary admission letter, the student is notified and assigned a permanent advisor. Otherwise, the Admissions Committee will review the file and either makes a final decision or request that the student complete the GMAT.

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

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

Interviews: Required by the MAT, MA and MST programs 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, technology) in which they seek certification.

Additionally, MAT applicants will need to complete the following prerequisites:

- A course in Educational Psychology or its equivalent
- One year of a college-level foreign language or its equivalent
- Two weeks of structured field experiences and the journals associated with them (one in a high-needs district)

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.

Note: A Program may waive the professional evaluation of international transcripts if both items below are applicable:

- The applicant has completed an additional degree at a US institution, and
- They do not require the international transcript to apply waivers, transfers or waivers with replacement.

Note: If admitted, financials will be required for verification and issuance of DS-2019 or I-20. UGC documents are sent via Federal Express at the expense of the student.

APPLYING FOR SECOND PROGRAM OF STUDY

Students interested in completing both a Master of Arts in Teaching (MAT) and a Master of Arts in either English (MAE), History (MAH) or History and English (MAE/H) may do so using the following guidelines:

Applying for an MAT after the completion of an MA in English, MA in History or MA in English and History:
Students who are *about to complete or have recently completed* an MA in English, MA in History, or MA in English and History may apply for an MAT. The Dean of the School of Education may agree to waive up to four courses in the MAT degree based on the student's academic performance in the in the MA in English, MA in History, or MA in English and History. In this case, because the degrees are not pursued concurrently, students will be required to pay the school resource and application fee for the second degree.

Applying for an MA in English, MA in History or MA in English and History after the completion of an MAT:
Students who are *about to complete or have recently completed* the MAT degree may apply for an MA in English, MA in History, or MA in English and History. The Dean of the School of Education may agree to waive up to four courses in the second master's degree based on the student's academic performance in the MAT. In this case, because the degrees are not pursued concurrently, students will be required to pay the school resource and application fee for the second degree.

Applying for two master's degree programs concurrently:
Students wishing to work toward the completion of two master's degrees concurrently (for example, the MAT and an MA in English) may do so with approval and close monitoring from their advisor. The Dean of the School of Education may agree to waive up to four courses in one of the degrees based on the student's academic performance. In this case, because the degrees are pursued concurrently, the school resource and application fee will be charged only once.

Applying for MBA or MS during/after completion of one of the Management Certificate Programs:
Students enrolled in a Certificate Program may apply to the MBA/MBA in Healthcare Management or MS program during or after completion of the certificate program. If the student is accepted into an MBA program, up to four of the certificate courses taken may be transferable to the MBA program. Courses must be within the last five years with a grade of B- or better.

Students seeking an MBA or MS after the start or completion of their certificate program may not take additional non-matriculated courses. The GMAT must be completed before course work towards an MBA is started.

Applying to a Management Certificate program while in one of the MBA Programs:
For MBA students wishing to earn a Management Certificate, up to four applicable courses from the MBA program can be used for the Certificate. This means that two additional courses beyond the requirements for the MBA degree will be required for the Management Certificate. Note: Students may not take additional non- matriculated courses.

Applying to a Management Certificate Program after completion of an MBA:
For MBA alumni wishing to earn a Management Certificate, up to four applicable courses from the MBA program can be used for the Certificate. This means that a minimum of two additional courses beyond the requirements for the MBA degree will be required for the Management Certificate. Courses must be within the past five years and the grades must be a B- or better.

Applying for an MBA before or after completion of an MS degree:
Students may apply to an MBA program during or after completion of an MS degree program. MBA courses taken at UGC as part of the MS degree may be used to waive (core) required courses in the MBA program or to transfer into the MBA program as electives. These courses do not count toward the 12 course minimum required of all MBA students. Students must still meet the MBA program distributional requirements for electives; electives taken at UGC and transferred in may be used to satisfy these requirements. Courses must have been completed within the last five years with a grade of B- or better.

Applying to the MS in Bioethics program while in one of the BE Certificates:
Students who are currently enrolled in one of the Bioethics certificate programs may change their program to the MS program. Students are required to complete at least eight more courses in that specialization. Grades used towards the MS degree must be a B- or better. There is a program change form to complete and no application fee.

Applying to the MS in Bioethics program after one of the BE Certificates:
Students who have completed one of the Bioethics certificate programs may apply to the MS program. Students are required to complete eight more courses in that specialization. Grades used towards the MS degree must be a B- or better.

Applying to a BE Certificate program after the MS in Bioethics Program:
Students who have completed the MS in Bioethics program may apply to one of the Bioethics certificate programs. Students are required to complete at least three more courses. Grades used for the Certificate must be a B- or better.

Students who are currently enrolled in the MS in Bioethics program may not apply to one of the Bioethics certificate programs until they are finished with their MS degree.

Requirements for obtaining a second MBA

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

Typical requirements for an MBA in Healthcare Management, after having completed an MBA, are the two Health core courses, seven advanced Health courses and three electives not previously taken.

Typical requirements for an MBA, after having completed an MBA in Healthcare Management, are four MBA core courses and eight advanced non-health MBA courses not previously taken.

Materials and Fees for 2nd Program of Study:
Unless otherwise noted:

First page of the application
Application fee of $75
Resource fee (waived if doing concurrently, but defaults to higher fee)

DEFERMENT

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

REGISTRATION INFORMATION

PRIOR TO REGISTRATION

The following guidelines must be met prior to registration.

- **You must have a completed study or plan or have contacted your advisor.**
    - School of Management: You must have a completed study plan with your advisor. **Your study plan secures your seat in a class, but this is not your registration.** You must still register.
    - School of Education: You must have a completed study plan with your advisor/department prior to registration.
    - School of Engineering: You must contact Dean Kozik for course approval (Engineering and /or MBA Courses require approval) prior to registration.
    - Center for Bioethics and LIM Students: Contact Ann Nolte for course approval prior to registration if your plan has changed since last review.
- **Financial balance cleared:** You will need to clear any financial balance before registration. A balance will prevent you from registering.
- **Holds cleared**: All holds, such as financial, immunization, undergrad, etc., will block you from online registration and hold a paper registration. You can view any holds on MyUGC.

WAYS TO REGISTER

You can register online or through a paper registration. If this is your first time registering, you may need to use a paper registration.

ONLINE REGISTRATION

- In consultation with your academic advisor, have an academic plan in place.
- Go to MyUGC and follow the instructions for online registration.
- Once the registration has been cleared, you will receive a "successful" notification. Your registration will be audited against your academic/study plan. If it does not match, you will receive an "unsuccessful" email with instructions.
- Note: All independent studies will require paper registration

PAPER REGISTRATION

- Submit a paper registration through one of the following methods:
    - Register in person at the Graduate Center, located at 80 Nott Terrace in Schenectady. View our office hours.
    - Mail registration forms to: Union Graduate College, 80 Nott Terrace, Schenectady, NY, 12308.
    - Fax your registration to 518.631.9901.

- Scan your registration and email to both catharid@uniongraduatecollege.edu and sheehanr@uniongraduatecollege.edu.

Notes on registration:

- Whether you submitted your registration online or by paper, you can check your registration, print a schedule and get textbook requirements at MyUGC.
- Some classes have restricted enrollment. Please register early.
- The college retains the right to cancel a course if enrollment is insufficient. Students will be notified by email if a course is cancelled.
- An academic graduation hold will NOT prevent you from registering.

For Union undergrads wishing to take graduate-level courses.
Before registering you must have both your undergrad advisor's approval and a graduate advisor's approval

- *Non-degree students* are limited to two courses (cumulative) with undergraduate and graduate advisor approval. Non-degree application and unofficial Union transcript is required.
- *Admitted joint program students* may take up to three (cumulative) with undergraduate and graduate advisor approval and must use paper registration until complete at Union and are full-time graduate students. Admission decision required prior to 3rd course.
- LIM students may use the online registration -- Juniors and Seniors only.
- Registration forms are available at either Registrar's office.

Auditing a Course Information

- Written permission of the instructor is required.
- Laboratory courses and independent studies may not be audited.
- Please note: Courses registered as audit cannot be changed back to credit after the start of classes.
- Audit fee is 50% cost of course.
- Registration is required and student is required to notify Student Services it is an audit.

Registration dates are listed in the Academic Calendar section of this catalog, on the course listings each term and on the web site. Information regarding registrations is emailed to current students and applicants for the upcoming term approximately two weeks prior to the start of registration. Current students registering after the registration period is closed may incur a late fee penalty.

SECTION NUMBERS

Course numbers may contain an extension number or section number (example: MBA-500-51 – the "51" indicates type/location of course).

00 No charge course: internship, lab, Engineering Project
01 Union College offering (undergrad)
21 Off-Site Locations
31 UGC Course taken @ ACPHS Campus
41 UGC Course taken @ Graduate Center
51 UGC Course taken @ Union Campus
61 Online Course (≥ 90% or more online)
71 Hybrid (blended online/on-site) (<90% in class)
81 Cross listed course with Union College/UGC
91 Independent Study

LATE REGISTRATION FEE

An additional fee will be assessed to late registrations (first time registrants are exempt).

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

COURSE PAYMENT

Payment: Payment can be made in person by check or credit card, by phone if paying by credit card, or at your student portal. Union Graduate College accepts Visa and Master Card.

Payment* in full is due the first week of the term unless:

- You are receiving loans and have completed paperwork for pre-approved loans which are posted week two.
- You are receiving pre-approved company billing
- Bioethics on-site course tuition is due one week prior to the start of the on-site course

*Payment for SOM Preliminary courses (001, 002, 003, 004) is due within 1 month of registration

ADD/DROP

Add-Drop period is the first two weeks during fall, winter & spring terms and the first week during summer term. If you have already submitted a registration form or an online registration for a specific term and want to make changes you can:

- Use a paper form – add/drop. Submit it to the Graduate Center
- Online – if you have access to online registration you can follow the same steps for registration.
- All students should get advisor approval.
- Schools of Management and Education must have an updated study plan.

You can secure a paper add/drop form at your student portal or on the UGC website. 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. Audits require appropriate course prerequisites and you 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 Student Services in writing prior to the end of the sixth week of classes. No tuition refunds are available for changes from credit to audit. Once classes have started you cannot switch from audit to credit bearing.

COSTS

FINANCIAL INFORMATION

TUITION COSTS (per course) – programs within:

School of Education:	
Degree programs	$2530
Certificate programs	$1100
School of Engineering/Computer Science	
All	$3060
School of Management	
Preliminary Courses	$650
All Degree & Certificate courses	$2995
Bioethics	
All	$2725*

* BE students tuition rate will hold for 3 years starting with date of matriculation. Coursework completed after that time will revert to that year's rate.

Tuition payment is due first week of class unless otherwise noted.

Full tuition payments and fees are due at Student Services the first week of classes. Tuition for on-site Bioethics courses is due one week prior to the start of the course. Students who do not make payment by then 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.

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. 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 Student Services 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 Student Services 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.

LIM Tuition

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

Tuition Waiver Policy

Students with tuition waivers must pay all fees other than course tuition. Tuition Waivers/Scholarship will be placed on your student account after add/drop periods.

Tuition Discount Programs

- **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 graduate alumni may return to take two additional courses at a reduced rate of 50% of the current full tuition. These courses cannot be used toward completion of another degree, certificate or extension program registered with New York State. This discount cannot be applied to already discounted courses. It is only applicable to full tuition course work and is provided solely as an opportunity for alumni to expand or update their knowledge base within their current field of study.

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 to Student Services.

Company Reimbursement

Some companies and government agencies pay their employees' tuition once grades are received. If your tuition will be paid in this manner, please contact Student Accounts at (518) 631-9833 at time of registration

Master Card 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.

FEES:

Application Fee (Non-refundable):

The $75 application fee is required of all degree-seeking or certificate applicants, with the following exceptions: Union College current students receive a waiver for this fee to all programs. Students employed as part of the Engineering Consortium (BPMI, KAPL, General Electric, Benet Labs and Plug Power and applying to an engineering degree). There is no application fee for non-degree students.

Resource Fee/Intent to Enroll (Non-refundable):

$450 Degree Programs/$175 certificate programs/$100 LIM students
After accepting an offer of admission all students are required to pay the 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, printing, student government, student activities, all graduation fees and regalia, diploma, and unlimited free transcripts.

Note:

- Non-degree and Middle School Extension programs do not require a resource fee
- If you are taking a degree program and certificate program concurrently, two fees are not required.
- LIM students pay this fee prior to graduation from UGC
- There is no refund if you don't use a service or don't participate in the commencement ceremony.

Late Fees - Registration:

An 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 Fees - 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.

Fee for Checks Returned To the College: $45

Master Project or Thesis Status Continuation: $500

Students registered for a master project or thesis is expected to complete it in the term they have registered. If not completed during the term, they will receive an incomplete grade and have one term to complete their project or thesis. In addition, they will be assessed a continuation fee of $500 to cover the costs of administration and advising.

Other Fees & Penalties:

Intent to Graduate Submission*	$0
Intent to Graduate Late Fee**	$50
Master's Thesis*	$0
Master's Thesis Fee Late Filing Fee***	$50

Diploma Fee*	$0
Diploma Replacement Fee	$50
Graduation Regalia*	$0
Transcripts*	$0
Transcripts-Federal Express	$25
Transcripts-Federal Express International	$60
Visa Documents-Federal Express	Priced per item by vendor
Parking Decal (annual)	$15 (Union undergrad campus only)
ID Cards*	$0
ID Card Replacement	$25

*Items included in your Resource Fee. Note - Paper transcripts included in Resource Fee (Federal Express will require requester to pay all FedEx fees in advance; each electronic transcript will incur a $3 fee).

**December graduation Intent is due October 1st, June Graduation date Intent is due February 1st

***Due date of 11/15/2014 (December graduation) and 5/30/15 (June graduation). Requirement includes Electronic filing of thesis and signed hard copy of cover sheet submission.

OTHER COSTS:

Books and Supplies

Books and supplies will be approximately $750 per academic year (based on full-time attendance). Once registered, you can secure a schedule, list of required books and book costs at your "My UGC Portal."

Living Expenses

Students are required to secure their own off-campus housing. The estimated cost of housing is from $500 to $700 per month depending on an individual's personal choice. The Financial Aid 9-month figure used in cost of attendance is $17,260 annually for 2014-2015.

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. For Summer Term refund policy dates, please refer to the current summer course listing and memo.

Add/Drop (first two weeks of a standard 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 date of withdrawal. 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 last date of attendance recorded.

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.

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.

This is based on a class meeting one time per week and others will be prorated. 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 any tuition paid for that course 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.

GENERAL FINANCIAL OBLIGATION

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.

FINANCIAL AID

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 (518-631-9836). 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 financial aid office. Union Graduate College's 3 year default rate for 2011 is 0.0%.

The Office of Financial Aid of Union Graduate College is located on the first floor of the Graduate Center in Student Services. The office 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 Director at (518) 631-9836. Students may qualify for one or more of the programs listed below. Student Services has a Financial Assistant who will process loan disbursements.

TYPES OF FINANCIAL AID

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. Students may borrow up to a maximum of $20,500 per academic year if qualified. Interest rate is fixed at 6.21% for loans borrowed in the 2014 - 2015 academic year.

Note: If the loan originally covers a term in which you do not enroll at least half time, the disbursement will not be accepted and will be cancelled by the financial aid office after verifying the student is not enrolled. Students who withdraw from Union Graduate College must visit the Financial Aid Office for exit information regarding their loan. Upon graduation, this online information session is required.

Federal Graduate 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 7.21% for loans borrowed in the 2014 – 2015 academic year. Please contact the Financial Aid office for more information.

Private Student 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. Please contact the Financial Aid office for more information.

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. Please allow 1-2 weeks after the end of the add/drop period.

Federal Work Study

Students who are interested should secure a form from the Financial Aid office in Student Services on the first floor of the Graduate Center 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 and may require an interview. Students will typically work 8-10 hours/week for the terms they are approved for.

Scholarships

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. Scholarship letters indicate the requirements for maintaining the scholarship. If there are any questions, please contact the Director of Admissions, Erin Wheeler at wheelere@uniongraduatecollege.edu (518) 631-9850.

Union College Employees: An eligible employee, who has received the necessary approval, may take up to four (4) courses per academic year, but no more than two (2) per term, without tuition charge. If space is limited in a particular course, preference will be given to full tuition paying students.

Union College Employee's Spouse, Domestic Partner, and Dependent Children: An employee's spouse, domestic partner, or dependent child is eligible to take up to three (3) course per academic year and may take three (3) of them in one term for credit without tuition charge. This scholarship support is not to be interpreted such that a spouse, domestic partner, or dependent child attending full time will have his or her bill reduced by one-third.

Union College Tuition Exchange courses are scholarships offered to Union College employees, their spouse, domestic partner, and dependent children. Graduate College Admissions and Scholarship rules and procedures apply.

Graduate College Requirements for Union Employees, Spouses, Domestic Partners and Dependent Children: The Graduate College requires all students, including those receiving this scholarship, meet their qualifications for admission. In addition, the Graduate College requires that all students who receive scholarships maintain a cumulative GPA of 3.2.

Please note that only degree programs are eligible for the Union Scholarships. Certificate Programs and non-degree students are not eligible for scholarships.

School of Education Scholarships

A limited number of scholarships are available from the program in the form of a Dean's Scholarship to recognize academic excellence. Other students who qualify based on financial need may receive some assistance in the form of need-based scholarship. Application forms for MAT scholarships are available from the School of Education office, Financial Aid 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.

School of Engineering and Computer Science Scholarships

A limited number of one-year and/or partial year tuition scholarships are available for qualified students. Some scholarships are associated with completion of a master's thesis as part of the qualified applicant's plan of study to complete his/her degree program. Applications are available from the admissions office or at our website, and you should contact the Dean, School of Engineering and Computer Science if interested.

School of Management Scholarships

Full Time Students Merit Based Awards
Full-time MBA students are automatically considered for merit-based scholarships and need not fill out a separate scholarship form. Scholarship is awarded in the form of tuition-free courses. Scholarship is allocated based on a combination of entering GPA and GMAT/GRE score or Joint JD/MBA Student's LSAT score. UGC budgets a limited amount of scholarship (free courses) annually. Each full-time MBA application is evaluated; however the annual scholarship budget is typically all allocated by August for the start of the academic year. Students will automatically be considered for scholarships in the following academic year. Students who are working full-time should submit a copy of their employee benefits to the Director of Admissions if they wish to be considered for academic scholarship. Students who were not required to take the GMAT/GRE for admission may elect to take the GMAT/GRE in order to qualify for scholarships. If taking the GMAT/GRE 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/GRE regardless of their grade point average at Union College. These scholarships 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 named 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 including scholarships must inform the Director of Admissions at (518) 631-9850. 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 nine-course scholarships are awarded in conjunction with the German Federation Exchange Program each year.

Center for Bioethics Scholarships:

There are a limited number of tuition scholarships. The application for these is on the website. The Scholarship Committee determines the disbursement of these based on need or merit as described on the application. These usually cover a portion of the tuition.

Director's 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.

Icahn School of Medicine at Mount Sinai:
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:
Bioethics students who elect to take more electives than are required for their program are eligible to take them for a 50% reduction in tuition.

Presidential Fund for International Scholarship in Bioethics:
Students residing in low- and middle-income countries, as defined by the World Bank, may be eligible to take Master's courses offered by the Bioethics Program at a 50% discount.

VETERANS ADMINISTRATION EDUCATIONAL BENEFITS

Union Graduate College welcomes veterans to all of our programs. Students who are eligible to receive educational benefits under the various chapters administered by the V.A. may obtain more information by contacting Student Services at 518-631-9834.

Entitlement will vary depending on the education program.

Students claiming veterans' benefits are required to:

1. Submit a Veterans Information form at the beginning of each term claiming benefits.
2. Certify that they will regularly attend the classes for which they are enrolled.

Students receiving VA benefits must immediately notify the Veteran's Certifying Official of any course changes (add/drop) during the term.

With the exception of students eligible under Chapter 33, students pay tuition and fees upon registering and subsequently receive benefit checks from the V.A.

Veterans who leave the Graduate College to perform military service are guaranteed readmission with the same academic status he/she had when last in attendance. The length of absence from the Graduate College cannot exceed five years under most circumstances.

Yellow Ribbon Program
The Graduate College participates in the Yellow Ribbon GI Education Enhancement Program, which is a provision of the Post-9/11 Veterans Educational Assistance Act of 2008. More information about this program may be found at: http://www.gibill.va.gov/GI_Bill_Info/CH33/Yellow_ribbon.htm.

POLICIES AFFECTING FINANCIAL AID ELIGIBILITY

Return of Title IV Aid

Under the Higher Education Amendments of 1998, Federal student aid 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. Any aid the student is deemed ineligible to receive will be returned to the lender and may result in a balance due to Union Graduate College.

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 last date of attendance recorded. Any aid the student is deemed ineligible to receive will be returned to the lender and may result in a balance due to Union Graduate College.

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 portion of the funds the student was not eligible to receive will be returned to the lender. This may result in a balance owed to Union Graduate College which must be paid before re-enrolling in courses at Union Graduate College.

ACADEMIC REQUIREMENTS

Union Graduate College has adopted the 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. Union Graduate College credit bearing courses are generally worth 3 1/3 credit hours. In converting to minutes each class uses between 2000 and 2400 minutes of in-class instruction.

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 equates 1 full course to 3 1/3 credit hours. All courses listed in this catalog are full credit courses unless designated otherwise.

Grading

Official grades are in the student Information System- found on your MyUGC portal. 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

WA	Waived	F-PF	Fail a Pass/Fail course
WA-R	Waived with Replacement	W-PF	Withdrew from Pass/Fail course
TR	Transferred	P-PF	Pass a Pass/Fail course
I	Incomplete	I-PF	Incomplete in a Pass/Fail course
Y	Faculty delayed grade*	Y-PF	Faculty delayed grade in Pass/Fail*
W	Withdrew (after add/drop)	Z	Audit

A matriculated student who had received a dismissal due to an "F" grade and has appealed and been granted reinstatement may repeat that course they previously failed. Both grades will be listed on the transcript, but ONLY the quality points and the credits attempted and earned from the SECOND course will be factored into their grade point average. Students cannot withdraw from the SECOND course.

All grades are posted on the student portal - under academics > my grades. They are not released over the phone or via email. You can also print an unofficial transcript from the portal.

*Faculty delayed grades are generally cleared within two weeks.

Grading 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.

(Y) Faculty delayed grades. Student has submitted all work but faculty requires additional time to grade. This is generally complete within 2 week

(I) 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 Student Services during or before required grading for that term.
2. All work must be completed at the end of the following term and a grade turned in to Student Services. If not it will result in an "F" grade and academic dismissal.

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 appropriate Dean/Director's office. An official notification will be sent from the Registrar's office once the Academic Committee has made decision. If approved student must complete by time indicated or grade awarded will be an "F" and academic dismissal.
4. School of Management Internships may carry over subsequent terms but must be completed before a degree can be awarded.
5. Students registered for a master project or thesis is expected to complete it in the term they have registered. If not completed during the registered term, they will receive an incomplete grade and have one term to complete their project or thesis. In addition, they will be assessed a continuation fee of $500 to cover the costs of administration and advising.

Withdrawal from a Course

1. With the advisor's signature, and with proper notice (Add/Drop form) to Student Services, 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 with an F-1 and J-1 visa, 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 Registrar, a grade of "F" will be posted to the record and student will be dismissed from that program.

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

Pass/Fail Grades

If a graduate thesis or project is two-part, the first part is graded with a pass/fail grade. After completion of the second part, a final grade is assigned. Non-credit bearing required internships are graded with a pass/fail grade also. A grade of "Pass" will not be calculated in the cumulative index; a grade of "Fail" however, will count as a failing grade. 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 Student Services 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. All grade changes must be made in writing and approved by the Dean/Director of the program. All non-clerical grade changes must also be approved by the Academic Committee.

The Academic Committee will not accept a request without a full explanation supported with detail.

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. The grade change appeal process is as follows:

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/Director 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 two (2) weeks, the student may make a formal written complaint to the Dean/Director of the School in which the class is offered. The Dean/Director shall review the complaint, consult with the faculty member and student, and render a decision within one week. If upon review, the Dean/Director finds sufficient grounds of an inequitable award of the grade to warrant a grade change, he may do so in consultation with the Academic Committee. (See the Student Handbook for more information on the Academic Committee.)

4. If the issue is not yet resolved within a second two (2)-week period, or if the student wishes to appeal the decision of the Dean/Director, the student may submit a written appeal to the Academic Committee. 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. The Academic Committee may, in its discretion, meet with the involved parties. In no case will the 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. Note: If the student believes he or she has been the victim of harassment or discrimination, the Affirmative Action Policy found in Appendix A of the Student Handbook describes the process by

which to file a formal complaint against any member of the Graduate College community.

Note: Official grades are posted in the Student Information System on your MYUGC Portal. Grades in Joule are not official Registrar grades.

Repeat Policy

A matriculated student who had received a dismissal due to an "F" grade and has appealed and been granted reinstatement may repeat that course they previously failed. Both grades will be listed on the transcript, but ONLY the quality points and the credits attempted and earned from the SECOND course will be factored into their grade point average. Students cannot withdraw from the SECOND course.

Students may repeat only one course (with approval of the teaching faculty and the dean/director) they have previously passed (with a grade of "C" or better). Both grades will be listed on the transcript. ONLY the quality points and the credits attempted and earned from the SECOND course will be factored into their grade point average. Students cannot WITHDRAW from the second course.

Note: A grade of "C" that is repeated will still count as it relates to the dismissal policy in this catalog. The repeat will not erase it for that policy.

Internships

Completion of College-supervised internships is a requirement for graduation in some programs. Entities hosting internships may inquire regarding health history, criminal history or require a criminal background check in order to permit students in their facility, and may deny a students participation in the program because of a felony or misdemeanor conviction, failure of a required drug test or inability to produce an appropriate health clearance which could result in delayed graduation or in the inability to graduate from the program.

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 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.

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 notified with an Academic Warning notification. 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 or Education 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 the program, 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 the program, 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.

Note: Academic Warnings notifications are sent to the student's email address on record. Suspensions and dismissals are sent to the students mailing address on record via certified mail.

The Academic Committee

The Academic Committee (AC) is responsible for recommending and applying Union Graduate College policy for the admission and academic performance of students.

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 conducting hearings on matters pertaining to student violations of the Standards of Academic Honesty and the Student Disciplinary Code and making 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 Student Services, 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. Student Services should be consulted when questions arise about the satisfaction of graduation requirements.

Notice of intent to graduate must be sent to Student Services no later than October 1 for December graduation or February 1 for a June graduation. A late filing fee of $50 will be charged for students not completing the form by the deadlines.

Waivers of Graduation Requirements

Request for waivers of graduation requirements must be made in writing to the program Dean/Director. The program Dean/Director 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

Except in extenuating circumstances official transcripts cannot be sent to students, but will be mailed to other educational institutions, certification boards, employers and prospective employers. This ensures the privacy of the student's academic records. Unofficial transcripts, without the college seal, are available for the student's personal records and are available for download on the student portal for students who were active as of 2005 or later. 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. A transcript request form can be found on the college website (www.uniongraduatecollege.edu) go to "students" and the Registrar. For questions please call 518-631-9832.

Paper Transcripts:

There is no charge for a Union Graduate College Paper Transcript unless special handling is required. Students will be charged for any special delivery modes. A request does require the student's or alumni's signature.

Official Paper Transcripts are sent directly to employers or institutions (requires the paper transcript request form to be completed, signed and submitted) (no fee).

Unofficial Paper Transcripts may be sent to the above as well as the requested (requires the paper transcript form to be completed, signed and submitted – please note "unofficial") (no fee).

Submit Form:

Mail:	Transcript Requests Union Graduate College 80 Nott Terrace Schenectady, NY 12308
Fax:	518.631.9901
Email(scanned signature):	transcripts@uniongraduatecollege.edu

Electronic Transcripts:

E-transcripts Union Graduate College has partnered with Parchment to allow alumni and students to request electronic transcript delivery. You can log in at their store front to secure this mode of delivery. (fee is $3/transcript) Website is: https://exchange.parchment.com/send/adds/index.php?main_page=login&s_id=WZIHUfnXyzxtDKpX

Information helpful when ordering transcripts:

- Name (specify if name was different when you attended)

- Degree Received (or number of classes/terms attended)
- Approximate dates of attendance
- Current contact information (phone, address, email)

DIPLOMAS

Diplomas will not be released to anyone who has not fully completed all degree requirements, 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 the completed form, along with fee, to Union Graduate College / Registrar's Office, 80 Nott Terrace / Schenectady, NY 12308.

Notification of Rights under FERPA

The Family Educational Rights and Privacy Act (FERPA) affords eligible students certain rights with respect to their education records. (An "eligible student" under FERPA is a student who is 18 years of age or older or who attends a postsecondary institution.) These rights include:

1. The right to inspect and review the student's education records within 45 days after the day Union Graduate College receives a request for access. A student should submit to the Registrar a written request that identifies the record(s) the student wishes to inspect. The Registrar will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the Registrar, the Registrar will advise the student of the correct official to whom the request should be addressed.

2. The right to request the amendment of the student's education records that the student believes is inaccurate, misleading, or otherwise in violation of the student's privacy rights under FERPA.

   A student who wishes to ask Union Graduate College to amend a record should write to the Registrar, clearly identify the part of the record the student wants changed, and specify why it should be changed.

   If Union Graduate College decides not to amend the record as requested, it will notify the student in writing of the decision and the student's 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 provide written consent before Union Graduate College discloses personally identifiable information (PII) from the student's education records, except to the extent that FERPA authorizes disclosure without consent.

   Union Graduate College discloses education records without a student's prior written consent under the FERPA exception for disclosure to school officials with legitimate educational interests. A school official is a person employed by Union Graduate College in an administrative, supervisory, academic, research, or support staff position (including law enforcement unit personnel and health staff); a person serving on the board of trustees; or a student serving on an official committee, such as a disciplinary or grievance committee. A school official also may include a volunteer or contractor outside of Union Graduate College who performs an institutional service of function for which Union Graduate College would otherwise use its own employees and who is under the direct control of Union Graduate College with respect to the use and maintenance of PII from education records, such as an attorney, auditor, or collection agent or a student volunteering to assist another school

official in performing his or her tasks. A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibilities for Union Graduate College.

Upon request, Union Graduate College also discloses education records without consent to officials of another school in which a student seeks or intends to enroll.

4. The right to file a complaint with the U.S. Department of Education concerning alleged failures by Union Graduate College 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
400 Maryland Avenue, SW
Washington, DC 20202

In addition, FERPA permits the disclosure of PII from students' education records, without consent of the student, if the disclosure meets certain conditions found in §99.31 of the FERPA regulations. Except for disclosures to school officials, disclosures related to some judicial orders or lawfully issued subpoenas, disclosures of directory information, and disclosures to the student, §99.32 of FERPA regulations requires the institution to record the disclosure. Eligible students have a right to inspect and review the record of disclosures. Union Graduate College may disclose PII from the education records without obtaining prior written consent of the student –

- To other school officials, including teachers, within Union Graduate College whom Union Graduate College has determined to have legitimate educational interests. This includes contractors, consultants, volunteers, or other parties to whom Union Graduate College has outsourced institutional services or functions, provided that the conditions listed in §99.31(a)(1)(i)(B)(*1*) - (a)(1)(i)(B)(*2*) are met. (§99.31(a)(1))

- To officials of another school where the student seeks or intends to enroll, or where the student is already enrolled if the disclosure is for purposes related to the student's enrollment or transfer, subject to the requirements of §99.34. (§99.31(a)(2))

- To authorized representatives of the U. S. Comptroller General, the U. S. Attorney General, the U.S. Secretary of Education, or State and local educational authorities, such as a State postsecondary authority that is responsible for supervising the university's State-supported education programs. Disclosures under this provision may be made, subject to the requirements of §99.35, in connection with an audit or evaluation of Federal- or State-supported education programs, or for the enforcement of or compliance with Federal legal requirements that relate to those programs. These entities may make further disclosures of PII to outside entities that are

designated by them as their authorized representatives to conduct any audit, evaluation, or enforcement or compliance activity on their behalf. (§§99.31(a)(3) and 99.35)

- In connection with financial aid for which the student has applied or which the student has received, if the information is necessary to determine eligibility for the aid, determine the amount of the aid, determine the conditions of the aid, or enforce the terms and conditions of the aid. (§99.31(a)(4))

- To organizations conducting studies for, or on behalf of, Union Graduate College, in order to: (a) develop, validate, or administer predictive tests; (b) administer student aid programs; or (c) improve instruction. (§99.31(a)(6))

- To accrediting organizations to carry out their accrediting functions. ((§99.31(a)(7))

- To parents of an eligible student if the student is a dependent for IRS tax purposes. (§99.31(a)(8))

- To comply with a judicial order or lawfully issued subpoena. (§99.31(a)(9))

- To appropriate officials in connection with a health or safety emergency, subject to §99.36. (§99.31(a)(10))

- Information Union Graduate College has designated as "directory information" under §99.37. (§99.31(a)(11)). Union Graduate College has designate the following as director information:

  Name and campus e-mail address;

  City, town or village and state or country of residence;

  Class, anticipated date of graduation, major field of study, including the college, division, department, or program in which the student is enrolled;

  Participation in officially recognized activities and sports;

  The most recent educational institution attended and previous educational institutions attended and dates of graduation therefrom;

  Honors and awards received, including selection to a Dean's list or honorary organization;

  Photographic, video or electronic images of students taken and maintained by Union Graduate College;

  Marital status and spouse's name

- To a victim of an alleged perpetrator of a crime of violence or a non-forcible sex offense, subject to the requirements of §99.39. The disclosure may only include the final results of the disciplinary proceeding with respect to that alleged crime or offense, regardless of the finding. (§99.31(a)(13))

- To the general public, the final results of a disciplinary proceeding, subject to the requirements of §99.39, if Union Graduate College determines the student is an alleged perpetrator of a crime of violence or non-forcible sex offense and the student has committed a violation of the school's rules or policies with respect to the allegation made against him or her. (§99.31(a)(14))

- To parents of a student regarding the student's violation of any Federal, State, or local law, or of any rule or policy of Union Graduate College, governing the use or possession of alcohol or a controlled substance if Union Graduate College determines the student committed a disciplinary violation and the student is under the age of 21. (§99.31(a)(15))

Family Policy Compliance Office
US Department of Education
400 Maryland Avenue, SW
Washington, DC 20202-5920
Phone: 1-800-USA-LEARN

STUDENT DISCIPLINARY CODE, SEXUAL HARASSMENT, NON-DISCRIMINATION 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 Disciplinary Code (See the Graduate Student Handbook). Any member of Union Graduate College community or a guest/visitor may file an incident report against a student with any member of the Academic Committee.

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.

All student policies and procedures can be found in the Student Handbook on the webpage: www.uniongraduatecollege.edu

SCHOOLS, PROGRAMS AND WAIVER/TRANSFER POLICIES

SCHOOL OF EDUCATION

Location: 80 Nott Terrace, Schenectady, NY 12308
Telephone: (518) 631-9870
Fax: (518) 631-9903

Interim Dean: Lynn M. Gelzheiser
Associate Dean 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
- Master of Arts in English, History and English/History

Certificate of Advanced Study Programs

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

Extension Program

- Middle Childhood Extension (grades 5-6)

Professional Development Projects with Schools

- National Board Certification Facilitators Support Groups
- Establishing Effective Mentoring Programs in Schools
- National Consortium for Teaching about Asia
- Star Talk Chinese language Teacher Program

Articulation Agreements

The School of Education has articulation agreements with Union College, Hamilton College and Skidmore College whereby students who have graduated from either of these

institutions with a 3.25 GPA or better will be eligible for two course waivers/transfers into 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.

Accreditation

TEAC – Teacher Education Accreditation Council

The School of Education programs are accredited by the nationally recognized Teacher Education Accreditation Council (TEAC). The School of Education received the highest rating by TEAC in 2008 with no recommendations for change and a ten year accreditation.

Waiver/Transfer Policy

General Guidelines for Degree Programs

Waiver/transfer credit may be granted by the Dean, following the guidelines below, for coursework completed prior to matriculation at UGC, and typically within the past five years. Transfer and waiver decisions are typically made by the Dean upon admission, based on review of the student's transcript.

A student may request a transfer or waiver. Such a request must be submitted to the Dean by the end of the first term during which the student is matriculated, and accompanied by a copy of the transcript showing the relevant course(s) and a catalog description of the course. Students are encouraged to attach syllabi and other materials that will help the Dean, and if needed, the Academic Committee, to decide about the request.

Transfer or waiver requests for a course taken while matriculated may be considered, if the course is unique to the student's career needs, not offered at UGC, and/or solves a pressing scheduling problem. These requests must be pre-approved, in writing, by the Dean.

Two courses may be waived or transferred by the Dean; under unusual circumstances a third course may be transferred, if approved by the Academic Committee. The remainder of program courses must be completed at UGC.

Waiver of an Education Course

A student may be granted a **waiver** for a core (education) course, if he/she has taken a similar course at the undergraduate or graduate level, and obtained a final grade of B- or

better. The waived course may have been taken as part of another degree. There are three types of waivers:

1. A **waiver with fee remission** is the most commonly granted waiver. Although the student has taken a similar course elsewhere, he/she will register for and complete the comparable UGC course and the UGC grade and credit will show on the UGC transcript. There is no fee.
2. A **waiver with replacement** enables the student to take an alternate course, rather than taking the comparable UGC course. Replacements do not reduce the total courses required. The Dean will approve the specific replacement course. The student must register for the replacement course, and the UGC grade and credit will show on the UGC transcript. There is a fee for the replacement course.
3. A simple **waiver** is rarely granted. In this case, there is no registration, grade, or fee. Waivers reduce "official" course load and appears at the top of the transcript with no grade.

Content Course Transfer

A student may be granted a **transfer** of a content (i.e., subject area) course, if he/she has completed a graduate level course relevant to the field of certification with a grade of B- or better. If the course transferred was used to meet the requirement of another degree, the Dean has the discretion to allow this course to be transferred. Transfers reduce the total courses required, that is, there is no registration, grade, or fee. The transferred course is listed on the transcript with no grade.

Up to two content courses may be transferred by the Dean. A student who has completed a PhD in the field of certification may apply for a third transfer course in the field of certification. This request must be approved by the Academic Committee.

If a student has attended an undergraduate institution with which UGC has an articulation agreement, and the student has a GPA of 3.3, he/she is able to transfer two upper-level undergraduate content courses. Transfers reduce the total courses required, that is, there is no registration, grade, or fee.

Receiving Credit for Program Prerequisites

Foreign Language: This prerequisite is met if the student is a native speaker of a foreign language, or has completed two undergraduate semesters of a second language study, or three years of secondary school second language study with a minimum of a B average.

Educational Psychology: This prerequisite can be met by taking PSY 246 at Union College, or one undergraduate or graduate course in Educational Psychology, Adolescent Learning/Development, Learning Theory, or the equivalent. This prerequisite can be met by passing a CLEP exam, or the SOE exam.

EDS 500A: This requirement may be waived if the student has taken one undergraduate or graduate course or equivalent in field observations at the middle school/junior high school level.

EDS 500B: This requirement may be waived if the student has taken one undergraduate or graduate course or equivalent in field observations at the high school level.

Certificate Programs Waivers
The Certificate of Advanced Study programs at UGC do not include electives. A student may have taken one of the CAS requirements (e.g., School Law) elsewhere, or may have taken one of the requirements as a part of another CAS at UGC (e.g., School Law, Teacher Leader Capstone). If the requirement has been met with a grade of B- or better, then the requirement to re-take the course can be waived by the Dean. Only one course may be waived per CAS program.

DEGREES

The Master of Arts in Teaching (MAT)

The objectives of the Master of Arts in Teaching program are to provide students with advanced teaching skills and classroom experience in order to develop reflective teaching practices and the ability to connect with teaching. This is done under the guidance of master teachers and leads to New York State Initial Certification in the discipline studied.

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 biology, chemistry, Chinese, earth science, English, French, German, Greek, Latin, mathematics, physics, social studies or Spanish in secondary schools or technology at the K-12 level. The 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.

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 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 letters of recommendation are required; two of the letters must be academic about academic performance. 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 second language study at the college level or its equivalent before the college can recommend certification.

MAT Program Requirements

The MAT program requires at least 16 courses in pedagogy and the subject area for which certification is sought.

Prerequisites are:

- PSY-246 (Educational Psychology) or its equivalent
- One year of a college level second language study or its equivalent
- EDS 500 A, B (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 (9):

- 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, Sciences, Social Studies or Technology)
- EDS 541 (Essential Reading Literacy)
- EDS 544 (Writing in the Content Classroom)
- EDS 550A (Special Needs Seminar)
- 550B (Seminar on Discipline Assessment and Motivation)
- 550C (Seminar on Teacher as Change Agent)
- CST 570 (Computers in the Language Arts Classroom) or 571 (Computers in the Math & Science Classroom)

Additional Program requirements (7):

- One-year teaching internship (EDS 551, 552, 553)
- One-term, classroom-based master's research project (580)
- Three subject area electives.

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; Essential Reading Literacy and the appropriate Curriculum and Methods course with minimum grades of "B."

The MAT Project

Students enroll in XXX 580 (XXX determined by discipline), which involves carrying out classroom-based research in an academic discipline and related pedagogy. Students who plan to continue in to doctoral study may elect to complete a thesis in lieu of the MAT project.

Instructional Technology Literacy (Core Course)

Each student in the MAT program is expected to leave the program with increased computer and instructional technology literacy. Students are required to take CST 570 or 571. These courses will emphasize tools in use in the secondary curriculum and classroom.

Elective Coursework

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. 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 initial certification. Selected students will be accepted into the Post-Graduate Degree Teaching CORE. The CORE consists of 12 graduate courses in pedagogy including a year-long internship (counting for 3 of the 12 courses). A full-time, nine-week summer term is required. Students who complete only the CORE are not recommended for certification by the School of Education program. Each CORE student must apply for certification on her/his own. That means each CORE student must meet the letter of New York State certification standards as defined by the Office of Teaching Initiatives. This certification route is only available for certain disciplines.

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 246 (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 nine-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 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 (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 after the date of graduation. 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, DASA and Drug Abuse/Child Abuse training, passed all four of the NYS certification examinations (EdTPA, EAS, ALST, and CST) in order to be certified. Payment 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 graduate may apply for Professional Certification after s/he has completed three years of full-time teaching

Outline of MAT Program

Prerequisites: Educational Psychology or equivalent, EDS 500A, EDS 500B (non-credit, two weeks), or equivalent; one year of a college level second language study or its equivalent.

Summer Session: A nine-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, EDS 540L, EDS 541
Fall:	EDS 550A, EDS 551 (internship), XXX 580 (MAT Project), Elective
Winter:	EDS 550B, EDS 552 (internship), EDS 544, Elective
Spring:	EDS 550C, EDS 553 (internship), EDS 500C, Elective, CST 570/571

The Master of Arts in English, the Master of Arts in History and the Master of Arts in History and English

The objectives of the Master of Arts in English, Master of Arts in History and the Master of Arts in English and History programs are to improve students' core content knowledge

(English and History), especially for teachers in grades 7-12 and for professionals seeking graduate level academic education.

Union Graduate College is proud of its long history of providing strong academic development in the disciplines and producing graduates who are known for their exceptional academic strength and superb preparation to teach. Our newest degree programs, the Master of Arts in English, Master of Arts in History, and the Master of Arts in English and History, expand our reputation for quality academic and teacher preparation.

This degree is also an attractive option for:

- Teachers who have attained Initial Certification in a bachelor's program and who need a master's degree to attain Professional Certification,
- Teachers seeking professional development in academic content in order to meet the 175 hour professional development mandate,
- Individuals seeking a master's degree in an academic discipline for professional reasons (such as private school teaching, library work, museum personnel, and research work),
- Individuals who intend to pursue doctoral study and are seeking further preparation for that degree.

At Union Graduate College, students will gain more than an advanced degree. They will learn a wider range of teaching methods to engage their students and breathe new life into their English and History curriculum. Those seeking non-teaching professional work will achieve much greater depth of knowledge in their discipline.

Program Requirements

The MA in English, MA in History, or the MA in English and History is awarded upon the completion of eleven courses (36.63 credits). At least six of the courses for English or History, or eight of the courses (for English and History) need to be in an academic subject area (English, History, or English and History), although all 11 courses may be in one or both discipline areas. Beyond the six to eight courses in the discipline, each student may complete up to three to five courses in electives related to teaching, such as a higher education certificate in Teacher Leadership and Mentoring or Teacher Leadership and National Board Certification, a Middle Childhood Extension, or electives such as Literacy, Assessment, or Special Needs Populations.

Normally the degree can be completed on a part-time basis over a 2-3 year time span for those students working full-time. The program can also be completed on a full-time basis in one calendar year.

Students 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 Union Graduate College faculty advisor.

MA in English Program Content:

Core:

EGL 581	Criticism
EGL 580 or EGL 598/599	MA Project or Thesis
EGL 510	Writing and Teaching: A Process Approach
EGL 523	The American Short Story
EGL 524	Modern American Fiction
EGL 565	Reading Shakespeare
EGL 582	The Civil War Era, Interdisciplinary Approaches
EGL 595	Reading Poetry
EGL 596	Reading American Fictions

Electives: Students work with academic advisors to select up to five electives from the Master of Arts in Teaching Program, the Certificates of Advanced Study in Teacher Leadership and Mentoring or Teacher Leadership and National Board Certification, a Middle Childhood Extension, or elective courses such as Literacy, Assessment, or Special Needs Populations.

MA in History Program Content

Core:

HST 580 or HST 598/599	MA Project or Thesis
HST 589	Comparative Social Studies
HST 510	Comparative Global History
HST 511	The Writing and Ratification of the Constitution
HST 582	The Civil War Era, Interdisciplinary Approaches
HST 584	Personality in History
HST 558	The Holocaust
HST 596	The Presidency

Electives: Students work with academic advisors to select up to five electives from the Master of Arts in Teaching Program, the Certificates of Advanced Study in Teacher Leadership and Mentoring or Teacher Leadership and National Board Certification, a Middle Childhood Extension, or elective courses such as Literacy, Assessment, or Special Needs Populations.

Master's Research and Thesis

Each student undertakes a capstone research project in their academic discipline or interdisciplinary concentration by completing either a two-term thesis supervised by an academic faculty member or a one-term MA Project consisting of classroom-based research in an academic discipline related pedagogy. The thesis advisor is normally a faculty member in the academic discipline.

Admission to the MA in English, MA in History or MA in English and History

The School of Education admits students on a rolling basis throughout the year. Admission to these degree programs is based on evidence of intellectual achievement,

motivation, and aptitude for the profession. All teaching students must possess or be a candidate for an undergraduate degree from an accredited college or university before applying for graduate admissions status.

A grade of B (3.0 cumulative index) or better in previous undergraduate and graduate work is generally expected for admission.

- A minimum of 30 units in the field of certification.

The program is generally designed for those students who have completed the course work for Initial Teaching Certification, grades 7-12, although some students who already hold Initial Certification choose to complete the program to achieve the master's degree necessary for Professional Certification before they teach full-time. The program is also appropriate for those professionals who need in-depth graduate study in the academic disciplines of English, history, or English and history.

Combined Master's Degree Program:

Applying for an MAT during or after the completion of an MA in English, MA in History, or MA in English and History:
Students about to complete an MA in English, MA in History, or MA in English and History may to apply for an MAT. The Dean of the School of Education may agree to waive up to four courses in the MAT degree based on the student's academic performance in the in the MA in English, MA in History, or MA in English and History.

Applying for an MA in English, MA in History or MA in English and History during or after the completion of an MAT:
Students about to complete the MAT degree may to apply for an additional master's degree. The Dean of the School of Education may agree to waive up to four courses in the second master's degree based on the student's academic performance in the MAT.

The Master of Science for Teachers

The objectives of the Master of Science for Teachers of Mathematics and Science program are to enhance already certified teachers competence and skills in the classroom, and expand their ability to teach their subject at different grade levels in mathematics and science.

This graduate program is designed for individuals who already hold initial certification with the State of New York and wish to gain the Master's degree necessary for professional 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 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 Master of Science for Teacher's degree in science or mathematics is awarded for the completion of eleven courses (36.63 credits). Normally, six 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 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 Project

In lieu of a thesis, students may enroll in ___ 580, which involves carrying out classroom-based research in an academic discipline and related pedagogy. Students who write an MS for Teachers 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 Coursework

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 courses may be accepted in transfer.

Technology 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/technology 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.

CERTIFICATES OF ADVANCED STUDY

Teacher Leadership and National Board Certification
The objectives of the Certificate of Advanced Study in Teacher Leadership and National Board Certification are to provide support toward the achievement of National Board Certification and teach the skills needed to assume leadership roles within their schools and with larger education communities.

Teacher Leadership and Mentoring
The objectives of the Certificate of Advanced Study in Teacher Leadership and Mentoring are to prepare teachers to become highly trained mentors in order to provide schools with the necessary district, building, departmental and individual perspectives necessary to oversee a quality mentoring program.

Teacher Leadership and Service Learning
The objectives of the Certificate of Advanced Study in Teacher Leadership and Service Learning are to provide teachers with hands-on knowledge of Service Learning as pedagogy and as a philosophy of teaching and learning with the goal of implementing this pedagogy in their professional practice.

Program Requirements:
Certificate of Advanced Study in Teacher Leadership and Mentoring (16.5 credits)*
Certificate of Advanced Study in Teacher Leadership and National Board Certification (13.2 credits)*
Certificate of Advanced Study in Teacher Leadership and Service Learning (13.2 credits)*

Waiver/Transfers Policy for Certificate Programs:
Students who wish to take a second or third School of Education certificate program may waive the Teacher Leadership Capstone course if taken at Union Graduate College within two years and received a grade of B- or better. Students can also waive the School Law course if they have taken it at Union Graduate College and achieved a B- or better.

Admissions Requirements:
Application Materials required:

- Application form
- Application fee of $75
- Official Transcripts
- Upon admission a reply form and $175 resource fee will be due.

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 admissions at (518) 631 – 9831 or go to www.uniongraduatecollege.edu
- Submit official transcripts for all previous coursework
- Submit completed application with the $75 application fee

Cost:

- Application fee of $75
- Tuition for one course is $1100
- Resource fee of $175

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

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 Teacher Leadership and National Board Certification

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

Courses required for the Certificate of Advanced Study in Teacher Leadership and Service Learning

EDS 630 Introduction to Service Learning
EDS 631 Advanced Service Learning
EDS624 School Law
EDS 625 Teacher Leadership

Course Waivers and Transfers (certificate programs):

- EDS 624 School Law and EDS 625 Teacher Leadership can be double counted between two certificate programs if the programs are completed successively.
- Courses may be applied with advisor approval 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 objectives of the Middle Childhood Extension program are to develop teachers' specific literacy and pedagogy knowledge in order to extend a 7-12 certification to the 5th and 6th grade. This program results in New York State Certification for 5th and 6th grade in the discipline to which the teacher is primarily certified.

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, Chinese, French, German, Greek, Latin, mathematics, physics, social studies and Spanish.

Program Requirements:
Required Classes:

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

Admissions Requirements:
Application Materials required:

- Application form – School of Education (no fee)
- Official Transcripts from latest degree (not required for UGC alumni)

Application Criteria:

- Must hold current, valid NYSED Certification
- Generally a 3.0 in all previous coursework

Cost:

- Tuition for one course is $1100

JOB PLACEMENT STATISTICS

MAT/MST graduates pursuing teaching 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%

2008 Graduates
Percent placed at six months after graduation - 93%

2009 Graduates
Percent placed at six months after graduation - 78%

2010 Graduates
Percent placed at six months after graduation - 78%

2011 Graduates
Percent placed at six months after graduation – 77%

2012 Graduates
Percent placed at six months after graduation – 80%

2013 Graduate
Percent placed at six months after graduation-- 91%

SCHOOL OF ENGINEERING AND COMPUTER SCIENCE

Location	80 Nott Terrace, Schenectady, NY 12308
Telephone	(518) 631-9881
Fax:	(518) 631-9902

Dean of Engineering and Computer Science:	Robert J. Kozik (631-9881)
Project Manager, Engineering and Computer Science:	Alan Holmes (631-9882)

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 Energy Systems
- Master of Science in Engineering and Management Systems

Certificates Offered

- Business of Energy (Online)

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.

Transfer Policy:

Students may be granted a transfer for any course (Core or Elective) based on completion of a comparable graduate level course with a grade of B- or better. Comparability will be based on the course catalog (syllabus may be required) and learning objectives. Prior coursework should have been completed within the last five years. The course transferred may not have been used to meet the requirement of another degree. Transfers reduce the total courses required. There is a maximum of two transfers allowed for School of Engineering and Computer Science programs.

Matriculated students are expected to take their courses at Union Graduate College. Occasionally, however, situations occur where matriculated students may take qualified courses at another school and these courses may be considered for transfer. Such transfers should be reserved for courses unique to the student's study (career) needs that

are not offered at UGC or courses that solved a pressing scheduling problem. Transfer of credit for these courses will require prior approval of the program advisor.

Directions:
Supply the information requested for each course you wish to transfer (see UGC – School of Engineering and Computer Science's policy). Required documentation includes:

- A copy of all relevant transcripts (originals must be on file at UGC)
- At minimum, a catalog description of relevant course(s)
- Relevant course syllabi are highly recommended

Submit completed form to Erin Wheeler, Union Graduate College, 80 Nott Terrace, Schenectady, NY 12308

Joint Degree and Other Programs:

Union College (UC) accelerated joint degree program:

- MSME Degree Program – no more than three UGC courses may double count for graduate and undergraduate degrees
- MSEE Degree Program – no more than three UGC courses may double count for graduate and undergraduate degrees.
- MS Energy Systems Degree Program – no more than three UGC courses may double count for graduate and undergraduate degrees.

Siena College cooperative program with Union Graduate College

This program enables a Siena undergraduate student pursuing a BS in Physics, Environmental Science, Computer Science, or Mathematics to complete a UGC M.S. degree in Electrical Engineering, Energy Systems, or Engineering and Management Systems in one additional year (depending on Siena course applicability to MS degree) after completing their Siena undergraduate degree.

Siena undergraduate students who want to enter this program must apply for and be granted admission to Union Graduate College no later than the end of the fall term of their senior year. Students are encouraged to apply as early as the end of their Sophomore year for these programs to facilitate appropriate undergraduate course selection at Siena and graduate course selection at Union Graduate College. A cumulative grade point average of 3.0 is expected for most programs. Acceptance into a program may enable students to apply up to three Union Graduate College 500-level graduate courses for credit in fulfillment of their undergraduate degree at Siena and their graduate degree at Union Graduate College, depending upon their program of study. Siena students have the option to not matriculate with Union Graduate College; and the graduate courses taken will still apply to their BS degree at Siena.

Students wishing to apply shall complete the application for admission to Union Graduate College, School of Engineering and Computer Science (see application form).

Only students that have met the acceptance criteria can register for Union Graduate College courses (see registration form). Registration requires both Siena and UGC advisor approvals. The UGC course registration and grade for Siena students will be provided by the UGC Registrar to the Siena College Registrar for their student undergraduate Siena transcript in addition to being recorded in a UGC graduate record transcript.

Knolls Atomic Power Laboratory
Technical Development Curriculum
At Union Graduate College
The Technical Development Curriculum (TDC) is part of a three-year Engineering Leadership Development Program that consists of KAPL work assignments as well as a program of technical study leading to a Master of Science Degree in Mechanical Engineering or Electrical Engineering. The KAPL portion of the TDC consists of one year of technical study in which Program members attend KAPL-taught lessons (termed TDC-1). The technical study for the remaining portion of the TDC consists of course work at UGC.

The Master of Science Degree is a degree comprising ten UGC courses. Successful completion of TDC-1 will be the equivalent of three UGC courses, and the no credit MER/EER 599 Master of Science Graduate Project. Each Engineering department will determine the entrance requirement for the degree programs. For additional information contact UGC, Dean, School of Engineering and Computer Science. Any transfers will appear on the top of the student's transcript. It will carry course credit but no grade will transfer in.

GE Power Systems and Energy Course
At Union Graduate College
The Power System and Energy Course (PSEC) in conjunction with Union Graduate College is normally a one-year program of technical study leading to a Master of Science Degree in Electrical Engineering. The Master of Science Degree is a degree comprising ten UGC courses. Successful completion of PSEC will be the equivalent of three UGC courses and the non-credit Graduate Seminar in Electrical Engineering. For additional information contact UGC, Dean, School of Engineering and Computer Science. Any transfers will appear on the top of the student's transcript. It will carry course credit but no grade will transfer in.

Integration of GE Edison Engineering A Course Into
School of Engineering, Union Graduate College
The Union Graduate College Master of Science Degree in Mechanical Engineering and Electrical Engineering is a degree comprising ten UGC courses. Successful completion of the GE Edison Engineering A Course @ GE-GRC will be the equivalent of three UGC courses and the no credit MER/EER 599 Master of Science Graduate Project. For additional information contact UGC, Dean, School of Engineering and Computer Science. Any transfers will appear on the top of the student's transcript. It will carry course credit but no grade will transfer in.

Integration of GE (Energy) A Course Into

Union Graduate College, School of Engineering
The Union Graduate College Master of Science Degree in Mechanical Engineering and Electrical Engineering is a degree comprising ten UGC courses. Successful completion of the GE (Energy) A Course will be the equivalent of three UGC courses and the no credit MER/EER 599 Master of Science Graduate Project. For additional information contact UGC, Dean, School of Engineering and Computer Science. Any transfers will appear on the top of the student's transcript. It will carry course credit but no grade will transfer in.

DEGREES

Master of Science in Computer Science

The objective of the Computer Science program is to expand the fundamentals and explore 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 571, 572 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,
- Programming languages CSc 513,
- Software systems CSc 510, CSc 516
- Hardware systems CSc 518, CSc 552

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 objective of the Electrical Engineering program is to explore technologies and related industry opportunities in modern electric machinery, modeling and control of power electronics. A strong emphasis is placed on 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 Energy Systems

The objective of the Master of Science in Energy Systems is to enable students to integrate: (1) Mechanical/Electrical energy related courses, (2) Mechanical and Electrical fundamental discipline courses and (3) non-technical courses regarding the impact of environmental, economic, and regulatory issues on energy. This is a technical degree focused on energy systems and related technology and the impact of our external changing environment on these technologies.

The engineering profession continues to require the understanding and application of technologies that complement each other in their product, system or service applications. Course offerings that include two disciplines (Mechanical/ Electrical Engineering) provide a student with the technical breadth/depth required to compete in the design, commercialization, and service associated with products related to emerging energy systems. Career growth may be additionally enhanced by a broad understanding of non-technical elements impacting change such as sustainability, the disruptive nature of new technology, and regulatory policy and law. The Master of Science in Energy Systems provides a balanced degree program of energy focused mechanical/electrical courses, fundamental discipline mechanical and electrical courses, and the broad understanding of related environment, economic, and regulatory issues.

Program Requirements

A minimum of 11 graduate courses are required. Each student's program will include at least 5-9 energy related mechanical or electrical engineering courses, 0-4 fundamental technical mechanical or electrical engineering courses, and 2-3 non-technical MS Mechanical/Electrical energy related courses. Each student will, in conference with their graduate advisor, plan a complete graduate program prior to taking any courses for graduate credit. Students with weaker backgrounds may need to take more than 11 courses. The student's advisor will approve every course taken for graduate credit toward this degree.

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

- Mechanical Engineering – MS credit bearing Mechanical Engineering courses designated as Energy Related
- Mechanical Engineering – MS credit bearing Mechanical Engineering technical and non-technical courses

- Electrical Engineering – MS credit bearing Electrical Engineering courses designated as Energy Related
- Electrical Engineering – MS credit bearing Electrical Engineering technical and non-technical MS courses

Mechanical Energy Related Courses

MER 522	MER 551
MER 560	MER 580
MER 580A	MER 580B
MER 580C	MER 580E
MER 580F	MER 580G
MER 541	

Electrical Energy Related Courses

EER 522	EER 528
EER 542	EER 542A
EER 542B	EER 551
EER 560	EER 561
EER 570	EER 580
EER 580A	EER 580B
EER 580D	EER 580E
EER 580G	

Mechanical Non-Technical-Energy Related

MER 600	BOE 610
MER 601	BOE 611
MER 602	BOE 612
	BOE 613
	BOE 614
	BOE 615

Electrical Non-Technical-Energy Related

EER 600	BOE 610
EER 601	BOE 611
EER 602	BOE 612
	BOE 613
	BOE 614
	BOE 615

MSME – Technical

MER 500	MER 501
MER 502	MER 506
MER 507	MER 508
MER 509	MER 510
MER 512	MER 515
MER 516	MER 525
MER 532	MER 534
MER 536	MER 537
MER 538	MER 540
MER 550	MER 552
MER 554	MER 571
MER 572	MER 573
MER 576	MER 580D

MSEE Technical

EER 543	EER 518
EER 548	EER 547
EER 571	EER 552
EER 573	EER 572
EER 576	EER 574

Master of Science in Mechanical Engineering

The objective of the Mechanical Engineering program is to expand 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 non-technical courses to integrate business skills that complement their 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.

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 or two course) or a thesis (two courses) with departmental approval (these opportunities are limited). 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 objective of the Engineering and Management Systems program is to integrate engineering and computer science technologies with the core components of an MBA. Students become architects of a multi-disciplined technical/management degree that provides the skills necessary to quickly develop products and move them toward commercialization.

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, and 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 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 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 at least 1 of 2 or 3, 2 of 4 or 5, or 3 of 6 must come from CSc 571, 572, 583, 560, 561, 562, 563, 583B or MBA 641, 642 and 643. 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 following courses are also acceptable to meet the 5 business courses MER/EER 602, MER/EER 600, MER/EER 601, BOE 610, BOE 611, BOE 612, BOE 613, BOE 614, BOE 615.

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 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.

MS Degree Requirements in Engineering and Computer Science

MS Program Required	MS Thesis	MS Project or Independent Study	Core Course 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	**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.

				Three courses from the following: CSC, 571, 572 and 583.	
Electrical Engineering Ten courses required	Not required, but if the student elects to do a thesis, it counts as one or two technical electives.	Not required, but if the student elects to do an independent study, it counts as one technical elective.	No	Minimum of seven EE courses and up to three electives.	**The MS in Electrical 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	Not required 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
Energy Systems Eleven courses required	Not required	Not required	No	Five to nine energy related ME or EE courses. Zero to four fundamental technical ME or EE courses. Two of three non-technical	Not required

				ME/EE energy related courses.	

*MS Graduate Seminar (Computer Science) and MS Graduate Project (MSEE or MSME) are no-fee, no-credit course listings.

Certificate of Advanced Study in The Business of Energy Courses

Objectives:
The certification program in The Business of Energy blends contemporary energy issues and related business principles to create a focused learning experience. The primary objective is to increase competency to generate ideas, solve problems, and manage complexity in the challenging "Business of Energy"

Course Requirements:
The Business of Energy Certificate requires four courses (12 credits). The Fundamentals of the Business of Energy course is required and then students select three additional courses from the courses below. Four courses are required to earn the Certificate, however students will benefit greatly from completing all six courses. Students may enroll in particular courses without earning the Certificate and will need the approval of the Dean to do so.

Course Waiver Policy:
There are no course waivers/transfers for this certificate program.

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.

SCHOOL OF MANAGEMENT

Location	80 Nott Terrace, Schenectady, NY 12308
Telephone	(518) 631-9890
Fax	(518) 631-9902
Website	www.uniongraduatecollege.edu

Dean:	Bela L. Musits
Associate Dean:	Alan Bowman
Chair, MBA Healthcare Management Program	John Huppertz
Chair, MS Healthcare Data Analytics	Peter Otto

GENERAL INFORMATION

Degrees Offered

- Master of Business Administration (MBA)
- Master of Business Administration—Healthcare Management (HC-MBA)
- Master of Science Healthcare Data Analytics

Certificates Offered

- Certificate in Healthcare Management
- Certificate in Human Resource Management
- Certificate in Management and Leadership

Articulation Agreements

These agreements normally allow students to complete their MBA or HC-MBA degree 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) 631-9850

The School of Management has established articulation agreements with:

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

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 one of the smallest of all AACSB–International accredited business programs and one of only 28 accredited programs that focus solely on graduate degrees. Fewer than 30 percent of all business programs nationwide are accredited.

Course Waivers and Transfers (degreed programs):

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. A minimum of 12 courses (not including preliminary) must be3 completed at UGC for an MBA or 8 courses for an MS in Healthcare Data Analytics. If course waivers and transfers reduce the number of remaining courses below the minimum, students must take additional electives to reach the required minimum. Courses taken as part of the School of Management's international exchange programs and transferred in will count towards meeting the minimum course requirement. 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 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. This judgment will be based on the course content and its learning objectives. 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.

Waiver with Replacement:
Students are required to take a minimum of 12 courses at UGC for an MBA or 8 courses for an MS in Healthcare Data Analytics. If the total waivers and/or transfers would cause the requirements to fall below the minimum the Committee may grant a waiver with replacement. This means the waived course is not taken but one is taken in its place – it does not reduce the number of courses required. The Committee may also grant a waiver with replacement in cases where prior course work does not warrant graduate credit yet the Committee decides the student would be bettered served taking a different course. In this case, the Committee may specify the replacement course.

Course Waivers and Transfers (certificate programs):

- Only two courses can double-count between all Certificate Programs.
- No more than two courses may be waived with replacement. Those replacements must be selected from the courses listed on the Certificate Program Sheet.
- Four courses can double count with one of the degree programs in the School of Management. In other words, two additional courses must be taken for each certificate program if in both a degree and certificate(s) programs to complete the certificate requirements.

MBA Internships

MBA students without professional business experience are required to complete a minimum of 400 hours of professional 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. 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 seventeen required courses.

MBA International Studies

Exchange Programs

MBA students will have the opportunity to experience international business studies at Universities in France, Germany and/or China. UGC MBA students will generally spend the fall term studying abroad since it is most compatible with the semester system at these schools. Coursework completed at the overseas universities will transfer to UGC. Students pay tuition to UGC and pay their own travel and living expenses when abroad. This opportunity is available to matriculated UGC students who have completed at least one trimester of courses at UGC.

Exchange Programs with terms abroad are available at the following schools:

- **IESEG School of Management, Lille, France** http://www.ieseg.fr
- **Shanghai Jiao Tong University , Antai College of Economics and Management, Shanghai, China** www.acem.sjtu.edu.cn
- **University of Karlsruhe, Germany, Masters Programs of the Hector School** www.hectorschool.com

Study Tours

Currently two courses are offered that provide MBA students the opportunity to travel abroad as part of the course. Both courses take place in the break between the Fall and Winter trimesters. The courses are as follows:

China Study Course MBA 668

Powered by the world's most rapidly changing large economy, it is influencing our lives as consumers, employees and business people. This course will give MBA students a better understanding of "how to do business in China." The course will include a 12-day visit to Shanghai and Beijing in the month of December. The combination of university seminars on business related topics; visits to Chinese, foreign and joint venture companies; and some exposure to the history and culture of China will provide the basis for the understanding of the challenges of doing business in China.

Each student is required to conduct a research project, write a research paper, and present their findings. The intent is that the trip will offer the opportunity to do some primary research and to confirm or supplement the preliminary findings of the research. This is a course for MBA credit and will be considered a management advanced elective course designated as global. Mel Chudzik, who has lived and worked in China, will be the professor and will accompany the students to China.

Swiss Study Tour (Healthcare) HCM 601

This study tour will give Union Graduate College Healthcare MBA students a better understanding of the healthcare delivery system in Switzerland. The Swiss healthcare system is a combination of public, subsidized private and totally private systems. Like every other country in Europe, Switzerland guarantees healthcare for all its citizens. But the Swiss system does not remotely resemble the model of bureaucratic, socialized medicine often cited by opponents of universal coverage in the United States. That is why many academics studied the Swiss healthcare system as a model that delivers excellent healthcare across its population. Students will have an opportunity to learn firsthand about the unique characteristics of the system and attend seminars where experts in the field will discuss current issues in terms of healthcare delivery. We will also have a number of site visits at major research hospitals, private clinics, physician offices, HMO, and pharmaceutical companies. For further information about the program and cost, please contact Professor Peter Otto.

DEGREES

The MBA Management Program

Objectives

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 nine required core courses, seven advanced elective courses and the required capstone course for a total of seventeen courses. The program assumes prior course work in calculus, probability, microeconomics, and macroeconomics. Students without course work in any of these areas may complete a preliminary half-course in that area. These preliminary half-course are offered online, on-demand at a reduce cost. It is not required that a student will have completed all preliminary work before beginning the program. It is required, however, that students complete a preliminary half-course before taking another course for which the preliminary half-course is a prerequisite. After waivers and transfers, a minimum of twelve courses must be completed in the MBA, not counting any preliminary courses. For more details, see the waiver policy. One advanced level course must be taken in each of three required categories. Students typically complete most core courses before taking any advanced elective courses. Students must take all core courses within a category before taking an advanced course in that category. The capstone course (MBA 681) is

typically one of the last courses taken. An internship or relevant business experience is required for the degree. An internship is not considered one of the required courses. By taking additional courses in a given category, students can create their own personalized programmatic focus.

Preliminary Half Course (non-credit)
MBA 001 Mathematics of Management
MBA 002 Introduction to Probability
MBA 003 Microeconomics
MBA 004 Macroeconomics

Required Core Courses (Nine)
All students must complete and/or waive the required courses.

MBA 506 Statistical Models for Management
MBA 510 Financial Accounting
MBA 512 Managerial Accounting and Finance
MBA 517 Advanced Corporate Finance
MBA 525 Marketing Management and Strategy
MBA 531 Operations Management
MBA 545 Business Driven Information Systems
MBA 551 Managing People and Teams in Organizations
MBA 571 Ethical Principles of Business (1/2)
MBA 572 Legal Principles of Business (1/2)

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

Finance/Accounting and Economics

MBA 610**	Fraud and Forensic Accounting
MBA 611	Personal Financial Planning
MBA 612*	Advanced Management Accounting
MBA 613	Advanced Auditing and Research
MBA 618	Mergers, Acquisitions, and Corporate Restructuring
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 606	Advanced Statistics and Data Visualization
MBA 607	Data Architecture
MBA 625	Marketing Communications
MBA 626*	Marketing Research Techniques
MBA 627	Marketing High Tech Products

MBA 628	Consumer Behavior
MBA 632*	Quality Systems Management
MBA 633*	The Role of Statistics in Business and Industry
MBA 640**	Integrating eSystems Into Global Business
MBA 641*	Business Process Simulation
MBA 643*	Systems Analysis & Design for Managers
MBA 665**	International Marketing Management
MBA 682*	Management Science
HCM 609	Healthcare Customer Relationship Management
HCM 642	Data Analytics and Business Intelligence

Management and Human Resources

MBA 635	Project Management
MBA 650	Competing By Design
MBA 651	Communicating Globally
MBA 652	High Performance Leadership
MBA 653	Organizational Development and Transformation
MBA 654	Labor Relations
MBA 656	Ethics Issues in Management
MBA 658	Women and Management
MBA 660**	Executive Decision Processes in Global Environments
MBA 662**	International Business
MBA 664	Entrepreneurship
MBA 667	Leaders on Leadership
MBA 668**	China Study
MBA 674	Growing an Entrepreneurial Business
MBA 675	Foundations of HR Management
MBA 676	Managing Human Resources
MBA 677**	International Human Resource Management
HCM 601	Swiss Healthcare Delivery System

Capstone

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 seventeen courses.

Completing the MBA program in 12 months

Students with course waivers may be able to complete the MBA program in as little as one year. Students interested in this option should meet with an academic advisor to plan out an accelerated course schedule.

The MBA-Healthcare Management Program

Chair: John W. Huppertz (518) 631-9892
huppertj@uniongraduatecollege.edu

Objectives

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 healthcare, governmental, and private sector organizations with strong healthcare 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 healthcare 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 eight required core courses and nine advanced courses (seven required; two elective), for a total of 17 courses. The program assumes prior course work in calculus, probability,

microeconomics, and macroeconomics. Students without course work in any of these areas may complete a preliminary half-course in that area. These preliminary half-course are offered online, on-demand at a reduce cost. It is not required that a student will have completed all preliminary work before beginning the program. It is required, however, that students complete a preliminary half-course before taking another course for which the preliminary half-course is a prerequisite. After waivers and transfers, not counting preliminary courses, a minimum of twelve courses must be completed at the School of Management. For more details, see the waiver policy. 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 seventeen courses.

Preliminary Half Course
MBA 001 Mathematics of Management
MBA 002 Introduction to Probability
MBA 003 Microeconomics
MBA 004 Macroeconomics

Required Courses (15 Courses)

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

Economics
MBA–HCM Advanced Courses: HCM 620

Marketing and Operations
MBA–HCM Core Courses: HCM505, HCM 526
MBA–HCM Advanced Courses: None

Management Science
MBA–HCM Core Course: MBA 506
MBA–HCM Advanced Required Courses: None

Management
MBA–HCM Core Courses: HCM 501, HCM 507
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 Core Courses: None
MBA–HCM Advanced Required Courses: HCM648

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

Elective Courses (Two)
HCM 656
HCM 607
HCM 601
Any advanced elective offered in the MBA Program

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

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

The MS in Healthcare Data Analytics Program

Chair: Peter Otto, (518) 631-9895
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Objective
The purpose of the MS in Healthcare Data Analytics program is to prepare students with the skills to acquire, interpret and communicate healthcare data to shape the direction of the healthcare industry. Graduates will be prepared to take positions in healthcare organizations that require them to analyze high volumes of clinical, administrative and financial data.

Accreditation
The MS in Healthcare Data Analytics program is accredited by the Association to Advance Collegiate Schools of Business (AACSB) and by the Commission on Accreditation of Healthcare Management Education (CAHME).

Program Requirements
The MS in Healthcare Data Analytics program requires nine core courses and three electives.

Courses are offered online, with two on-site residency sessions of three days each at the beginning and end of the program.

Required Core Courses
All students must complete and/or waive the required courses.

HCM 500: Introduction to Healthcare Systems

HCM 507: Healthcare Leadership Proseminar
HCM 510: Healthcare Accounting and Finance
HCM 642: Data Analytics and Business Intelligence
HCM 648: Health Informatics
HCM 681: Strategic Issues for Healthcare Organizations (Capstone)
MBA 506: Statistical Models for Management
MBA 606: Advanced Statistics and Data Visualization
MBA 607: Data Architecture

Elective Courses
Students must complete three elective courses.

HCM 604: Hospital Analytics
HCM 606: Payer Analytics
HCM 607: Healthcare Operations Research
HCM 609: Healthcare CRM

MBA in Healthcare Management and MS in Healthcare Data Analytics Dual Degree Program

Objective
The MBA in Healthcare Management and MS in Healthcare Data Analytics dual degree program positions graduates to obtain jobs in healthcare informatics, data analytics, management science or healthcare management. The dual degree program significantly reduces the time and cost of earning both degrees, by allowing students to count shared courses towards both degrees.

Accreditation
The programs are accredited by the Association to Advance Collegiate Schools of Business (AACSB) and by the Commission on Accreditation of Healthcare Management Education (CAHME).

Program Requirements
The MBA in Healthcare Management and MS in Healthcare Data Analytics dual degree program requires 18 core courses and five elective courses.

Healthcare data analytics courses are offered online and healthcare management classes are offered both on-site and online. All students participate in three on-site sessions. Each session is three days long and fulfills one course requirement.

Required Core Courses
HCM 500: Introduction to Health Systems
HCM 501: Health Systems Management
HCM 505: Health Operations Management
MBA 506: Statistical Models for Management
HCM 507: Healthcare Leadership Proseminar

MBA 510: Financial Accounting
MBA 512: Managerial Accounting and Finance
HCM 526: Health Systems Marketing
MBA 606: Advanced Statistics and Data Visualization
MBA 607: Data Architecture
HCM 617: Healthcare Finance
HCM 620: Healthcare Economics
HCM 642: Data Analytics and Business Intelligence
HCM 648: Health Informatics
HCM 650: Structural Dynamics in Healthcare Systems
HCM 674: Legal Aspects of Healthcare
HCM 680: Health Policy and Epidemiology
HCM 681: Strategic Issues of Healthcare Management

Elective Courses
Students take two healthcare management and three healthcare data analytics electives.

Healthcare Management
Students choose two of the following electives:

HCM 601: Swiss Healthcare Study Tour
HCM 607: Healthcare Operations Research
HCM 656: Group Practice Administration

Healthcare Data Analytics
Students choose three of the following electives:
HCM 604: Hospital Analytics
HCM 606: Payer Analytics
HCM 607: Healthcare Operations Research
HCM 609: Healthcare CRM

Joint Degree and Other Programs

Accelerated BA or BS at Union College 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 seventeen graduate courses, three of which may, with undergraduate advisor approval, 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. Students may choose either the MBA or the MBA in Healthcare Management degree. There is a limit of five undergrads in each graduate level course.

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. Students may choose either the MBA or the MBA in Healthcare Management degree.

Joint PharmD /MBA in Healthcare Management
(with Albany College of Pharmacy and Health Sciences)

The MBA in Healthcare Management degree is a 17 course program. The PharmD/MBA joint program reduces the number of required MBA courses to 14. Up to three required courses from the MBA curriculum are waived based on courses taken in the PharmD program at ACPHS. Several MBA preliminary half courses are also met through the PharmD curriculum. In addition, PharmD students meet the MBA Internship Requirement with the selected practicum experiences which are part of the 6th year curriculum at ACPHS. Most joint program students complete the MBA course requirements on a part-time basis over a three year period (years 4-6 at ACPHS).

Joint BS Pharmaceutical Science /MBA in Healthcare Management
(with Albany College of Pharmacy and Health Sciences)

The MBA in Healthcare Management degree is a 17 course program. The BS/MBA in Healthcare Management joint program reduces the number of MBA courses needed from 17 to 14. Up to three required courses and three preliminary courses half courses from the MBA curriculum are waived based on courses taken in the BS program at ACPHS. The remaining courses are usually completed on a full-time basis the year following graduation from ACPHS. In addition to coursework, all MBA students are required to complete an administrative internship.

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.

MBA in Healthcare Management (LIM)

The LIM MBA in Healthcare Management requires 17 courses plus an internship as listed below:

Program Requirements:

- MBA 506 Statistical Models of Management
- MBA 510 Financial Accounting
- MBA 512 Managerial Accounting and Finance
- HCM 501 Health Systems Management
- HCM 505 Health Operations Management
- HCM 526 Health Systems Marketing
- HCM 617 Healthcare Finance
- HCM 648 Health Informatics
- HCM 656 Group Practice Management
- 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 553* Economics of Health (*or HCM 620, Health Economics)
- HCM 684 Strategic Issues for Healthcare Organizations (Capstone)
- Elective An MBA elective (described in School of Management Section)

An approved internship is required for the MBA in Healthcare Management. If taken as the MBA elective, LIM 571 fulfills the internship requirement. More information on this can be found in the School of Management section of this catalog.

Additional Cost

Students who elect to take the additional courses to achieve an MBA will be charged additional tuition by Union Graduate College

3 course tuitions- Spring of Senior Year
2 course tuitions- Summer following Senior year

Dual Union Graduate College MBA in Healthcare Management and Albany Medical College MD in Medicine

The Union Graduate College MBA in Healthcare Management/Albany Medical College MD is designed to provide students with a business understanding specific to healthcare and move them on to their medical education quickly. While many other medical schools offer a generic MBA, the Union Graduate College MBA in Healthcare Management is focused on the healthcare environment. Students study alongside others with a passion for healthcare, and learn how to manage a medical practice, deliver quality care in a cost-containment environment, market a practice, and lead other healthcare professionals.

Dual degree students are first admitted to Albany Medical College and then apply separately to Union Graduate College. Once admitted to both institutions, they defer the start of medical school by one year and spend about a year at Union Graduate College working on MBA courses. The second through fifth years are spent completing the MD degree requirements at Albany Medical College.

The combined programs allow students to "double count" courses which reduces the total time and cost associated with completing the two degrees separately. Five courses taken at Albany Medical College are transferred back to Union Graduate College to meet MBA requirements. The combined degree is typically completed in five years.

It is possible to join the Dual degree program after the start of medical school. Students would leave medical school at the end of their third year and spend 13 months at Union Graduate College completing MBA course requirements. They return to medical school for their final year.

Certificates of Advanced Study

Objectives
The purpose of the School of Management Certificate Programs is to allow professionals currently working in a field or wanting to enter a field to conduct intensive study in that field in an efficient and focused manner. Upon completion, students should be able to function more effectively in their specific fields. The Certificate Programs are not designed to provide a broad management background. If students wish to expand their management skills they may apply up to four of the courses taken in a certificate program toward the MBA.

Program Requirements
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 and students can take up to two non-matriculated courses. Students who earn two "C's" in the certificate program will not be permitted to continue in the certificate program.

Certificate in Healthcare Management
Healthcare has become one of the fastest growing industries in the US economy, characterized by rapid change and a need for management that will extend into the foreseeable future. The Certificate in Healthcare Management prepares individuals to take advantage of the opportunities in this field by introducing them to important business concepts applied to healthcare.

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 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.

JOB PLACEMENT

Job Placement Statistics:

Among MBA Graduates looking for jobs:

	2013	2012	2011	2010
Percent placed by time of graduation	96%	63%	69%	61%
Percent placed by three months post-graduation	96%*	91%	86%	82%
Percent placed by six months post-graduation	100%	91%	90%**	86%*

*At the six month point, data was unavailable on one graduate.
**At the six month point, data was unavailable on two graduates.

Among MBA in Healthcare Management Graduates looking for jobs:

	2013	2012	2011	2010
Percent placed by time of graduation	84%	80%	71%	67%
Percent placed by three months post-graduation	95%*	90%	86%	78%
Percent placed by six months post-graduation	95%*	90%	100%	100%

**Six MBA in Healthcare Management graduates were seeking jobs at graduation. At the six month point, data was unavailable on one graduate.

Among ALL MBA Graduates looking for jobs (Health and non-Health MBA's):

	2013	2012	2011	2010
Percent placed by time of graduation	91%	67%	70%	62%
Percent placed by three months post-graduation	95%*	90%	86%	81%
Percent placed by six months post-graduation	95%*	90%	91%***	89%*

*At the six month point, data was unavailable on one graduate.
**At the six month point, data was unavailable on three graduates.
***At the six month point, data was unavailable on two graduates.

CENTER FOR BIOETHICS AND CLINICAL LEADERSHIP

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Director	Sean Philpott-Jones
Assistant Director	Ann Nolte

GENERAL INFORMATION

Degrees Offered

- Master of Science in Bioethics: Clinical Ethics, Research Ethics or Bioethics Policy
- Master of Science Clinical Leadership in Health Management

Certificates Offered

- Certificate in Bioethics: Specialization in Health Policy & Law
- Certificate in Bioethics: Specialization in Clinical Ethics
- Certificate in Bioethics: Specialization in Research Ethics

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.

Center for Bioethics and Clinical Leadership

Course Waivers and Transfers:

Relevant course work previously taken at the graduate level (or equivalent advanced courses taken at the undergraduate level, generally with two undergraduate courses counting towards one graduate course) may be used to reduce the number of courses required to complete the MS in Bioethics or Certificate programs. These reductions can come in the form of either course waivers or transfers. The combined number of course reductions through waivers and transfers may not exceed three for an MS student or one for a Certificate student. At the discretion of the Center Director, experience (e.g. teaching an equivalent course or receiving documented training in the relevant subject matter) may also be considered.

Requests must be made in writing and accompanied with a copy of the transcript and a copy of the course syllabus. Students are encouraged to attach catalog descriptions and any other course materials that may aid in the decision. Course work must have been completed within the previous five years. A grade of B- or better (or equivalent) is required to be considered for waiver, transfer or waiver/transfer with replacement. Generally, courses taken for a pass/fail grade will not be considered unless the previous institution has a written policy that equates passing with a grade of B- or better. All requests must be submitted by the end of the fall term prior to graduation.

All course waivers and transfers must be approved by the Center Director. Approval is based on a review of the course materials and the student's transcript. The student will be notified of the decision two weeks after all required paperwork is received.

Course Waivers:
Course waivers may be granted for most core courses. Core courses are specific courses required to complete the MS degree or Certificate Program. Previous course work to be used for course waivers must have been done at the graduate level and may have been used to earn another degree. To have a course count towards a core course it must be deemed as an exact replication of that core course.

Course Transfers:
Course transfers are counted towards the elective9s0 needed in the MS degree. Transfers refer to courses that have been previously taken that do not correspond to a specific core course. Transfers do not have to correspond to a specific elective in the MS program as long as they are deemed relevant to the MS degree. Course considered for transfer may have been used to earn a previous degree.

Course Waiver/Transfers with Replacement:
The combined number of course reductions through waivers and transfers may not exceed three for an MS student or one for a Certificate student. Should the number qualified courses exceed this limit - students are granted a waiver/transfer with replacement, which does not reduce the number of courses required. If these are granted the student must take additional electives.

Dual & Joint Degree Agreements
Albany Law School
SUNY Albany School of Social Welfare
SUNY Albany School of Public Health
SUNY Albany Philosophy Department (PhD)
Mount Sinai School of Medicine

Note: For Union College undergraduate students, no more than three UGC courses may be double count for both graduate and undergraduate degrees.

Articulation Agreements
The Center for Bioethics and Clinical Leadership has an articulation agreement with the University of Pennsylvania whereby students who have taken the ½ course in Mediation

skills can transfer in that course to count as ½ credit towards the Bioethics Certificate in Clinical Ethics. Only a final grade of B- or better will be considered for waiver. Credit transfers in, but grades do not. Each request must be submitted on the appropriate form.

The Center for Bioethics and Clinical Leadership has an articulation agreement with the University of Maryland whereby students who have successfully completed the Certificate Program in International Health Research Ethics with a 3.3 GPA or better will be eligible for four course waivers/transfers in the Union Graduate College Masters of Science in Bioethics program.

Transfer/Waiver Policy (certificate programs)
Typically transfer or waiver courses are not accepted toward a certificate.

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 Icahn School of Medicine at Mount Sinai. Three focus areas are offered: Clinical Ethics, Research Ethics or Bioethics Policy. These are twelve course programs.

The MS in Bioethics provides advanced bioethics and clinical and research ethics education for doctors, healthcare administrators, lawyers, nurses, pharmacists, philosophers, researchers, IRB members, and students enrolled in professional and graduate degree programs. The hybrid format of short on-campus sessions and longer online courses has been specially designed to meet the needs of working healthcare professionals. Students will choose to specialize in Clinical Ethics or Research Ethics, Bioethics Policy. Students who do not have previous clinical/research experience may be required to enroll in an approved non-credit residency.

Program Objectives and Requirements

Master of Science in Bioethics: Specialization in Clinical Ethics (MSB: Clinical)
The objective of the MS in Bioethics with Specialization in Clinical Ethics is to provide individuals with the skills, credentials, and specialized expertise demanded of bioethics professionals. It prepares graduates to face increasingly complex bioethics issues—and to respond professionally, competently, and compassionately.

Courses are taught by professional bioethicists who provide a historical, theoretical, and practical perspective on bioethics. Students also gain essential experience in ethical decision-making and in certifying practical competence in bioethics policymaking and

clinical ethics. Clinical ethics segments are based on the American Society of Bioethics and Humanities (ASBH) core competencies.

The combination of online courses and on-site practica makes this the program of choice for many doctors, healthcare administrators, lawyers, nurses, pharmacists, and philosophers, as well as for students enrolled in or heading to professional and graduate degree programs.

Required courses:

BIE 500: Proseminar in Health & Human Values (on-site)
BIE 510: Biomedical Ethics
BIE 520: Healthcare Policy
BIE 530: Bioethics and the Law
BIE 590: Clinical Ethics
BIE 610C: Online Clinical Practicum: Clinical
BIE 620C: On-Site Clinical Practicum: Clinical
BIE 630: Master's Project I
BIE 640: Master's Project II
BIE 650: Capstone Practicum (on-site)

Students also take two elective course equivalents:
BIE 525 Public Health Ethics
BIE 533 Neuro Ethics (1/2 course)
BIE 543 Jewish Bioethics (1/2 course)
BIE 545 Reproductive Ethics
BIE 555 Research Ethics
BIE 563 Pediatric Ethics (1/2 course)
BIE 566 Foundations of Empirical Bioethics (1/2 course)
BIE 567 Survey Research Methods (1/2 course)
BIE 568 Empirical Methods in Healthcare Policy (1/2 course)
BIE 569 Statistical Methods in Healthcare (1/2 course)
BIE 573 Interpersonal Skills and Communication (1/2 course)
BIE 575 Bioethical Issues at the End of Life

Optional Residency:
BIE 622: Optional On-Site Residency (1/2 tuition – no credit)

Master of Science in Bioethics: Specialization in Research Ethics (MSB: Research)
The objective of the MS in Bioethics with a Specialization in Research Ethics is to give research professionals the knowledge and skills necessary to bridge the gap between theory and practice. Graduates of the program are uniquely positioned to advance ethical research, educate their peers, and inform and influence the national debate on research design, review, and oversight. This is the first program of its kind in the United States.

Through a combination of online courses and on-site practica, students gain an in-depth understanding of the ethical issues behind the rules and regulations that govern research,

as well as hands-on experience in applying that knowledge to real-world situations. As a result, students graduate with background and skills they can draw on throughout their careers, whether they design and conduct research studies, develop policies and standards, or administer or oversee large research programs.

Required courses:
BIE 500: Proseminar in Health & Human Values (on-site)
BIE 510: Biomedical Ethics
BIE 520: Healthcare Policy
BIE 530: Bioethics and the Law
BIE 555: Research Ethics I
BIE 580: Research Ethics II
BIE 610R: On-Line Practicum in Research Ethics
BIE 620R: On-Site Practicum in Research Ethics
BIE 630: Master's Project I
BIE 640: Master's Project II
BIE 650: Capstone Practicum (on-site)

Students also take two elective course equivalent:
BIE 525 Public Health Ethics
BIE 533 Neuro Ethics (1/2 course)
BIE 543 Jewish Bioethics (1/2 course)
BIE 545 Reproductive Ethics
BIE 555 Research Ethics (1/2 course)
BIE 563 Pediatric Ethics (1/2 course)
BIE 566 Foundations of Empirical Bioethics (1/2 course)
BIE 567 Survey Research Methods (1/2 course)
BIE 568 Empirical Methods in Healthcare Policy (1/2 course)
BIE 569 Statistical Methods in Healthcare (1/2 course)
BIE 573 Interpersonal Skills and Communication (1/2 course)
BIE 575 Bioethical Issues at the End of Life
BIE 590 Clinical Ethics

Master of Science in Bioethics: Specialization in Bioethics Policy (MSB: Policy)
The objective of the MS in Bioethics with a specialization in Policy is to provides individuals with the skills and specialized expertise to formulate, implement, evaluate, and modify policies that affect both the clinical and research arenas, as well as public health and other areas of the biosciences

Through a combination of online courses and onsite practica, Students gain an in-depth understanding of the ethical issues that they will face as a bioethicist.
Bioethicists participate in state and national commissions on issues such as access to healthcare, cloning, or assisted suicide. They also are on ethics committees for professional groups such as the American Society for Reproductive Medicine, issuing guidelines on issues such as egg donation, posthumous reproduction, and postmenopausal motherhood. Although such bodies operate at a more abstract level than the clinical

ethicist, they are not matters of theory alone, and require political skills to forge a consensus between often sharply diverging ethical perspectives.

Required courses:
BIE 500 Proseminar in Health & Human Values (onsite)
BIE 510 Biomedical Ethics
BIE 520 Healthcare Policy
BIE 530 Bioethics & the Law
BIE 570 Bioethics Policy: Philosophical, Economic and Psychological Foundations
BIE 525 Public Health Ethics
BIE 610P Online Practicum
BIE 535 Medicine & Social Justice
BIE 630 Masters Project I
BIE 640 Masters Project II
BIE 650 Capstone in Bioethics Policy (onsite)

Students also take one elective course equivalent:
BIE 525 Public Health Ethics
BIE 533 Neuro Ethics (1/2 course)
BIE 543 Jewish Bioethics (1/2 course)
BIE 545 Reproductive Ethics
BIE 555 Research Ethics
BIE 563 Pediatric Ethics (1/2 course)
BIE 566 Foundations of Empirical Bioethics (1/2 course)
BIE 567 Survey Research Methods (1/2 course)
BIE 568 Empirical Methods in Healthcare Policy (1/2 course)
BIE 569 Statistical Methods in Healthcare (1/2 course)
BIE 573 Interpersonal Skills and Communication (1/2 course)
BIE 575 Bioethical Issues at the End of Life
BIE 590 Clinical Ethics

Dual & Joint degree Agreements
You apply to each school independent of the Bioethics Program. Admission into one does not guarantee admittance to the other.

Albany Law School (JD)
We offer Concentrations in Clinical Ethics or Research Ethics
Students can complete both degrees in three to four years - The Bioethics Program MS in Bioethics degree is worth 12 credits towards a JD degree at Albany Law School. The Health Law concentration at the Law school earns you 3 courses towards our MSBE Degree

SUNY Albany School of Social Welfare (MSW)
Students in the dual degree program take a combination of online and on-site courses in social work and bioethics to complete a Master's in Bioethics and a Master's in Social Work.

MSW course: SSW 660 Introductory Research Methodology (3 credits) Counts toward the Bioethics Degree
Bioethics Courses: BIE 520 Healthcare Policy, BIE 510 Biomedical Ethics,
BIE 530 Bioethics and the Law – Count towards the MSW degree

SUNY Albany School of Public Health (MPH)
Students in the dual degree program take a combination of online and on-site courses in public health and bioethics. Upon successful completion, students are eligible to obtain a master's in bioethics (MSB) and a master's in Public Health (MPH.)
There are many specializations in the MPH courses- you need to check with your advisor about course requirements and waivers. The two degrees can be completed simultaneously.

SUNY Albany Philosophy Department (PhD)
We offer a dual masters and doctoral program in Philosophy and Bioethics, in which each program recognizes course credits in the other program as counting towards completion of their degree. The Doctorate in Philosophy requires 60 credits of philosophy, including up to 8 credits in a cognate field. The MS in bioethics program requires 40 credits, including a thesis project and two elective courses. The total number of credit hours normally required to complete both programs is100. The approved dual degree program requires 82 credit hours: 52 credits in the PhD in Philosophy program and 30 credits in the Master of Science in Bioethics. Eighteen credits count towards both degrees: Eight credits from the master's program count towards the doctoral degree and ten credits from the doctoral program count towards the master's degree. The students will attend the Albany campus for Philosophy work. Bioethics courses will be primarily online or on-site at the Icahn School of Medicine at Mount Sinai campus and Union Graduate College Campus.

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 healthcare 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 and Health Science;
3. students in neither of the previous programs who are considering medical or administrative healthcare careers.

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. The objective of this 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.

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 pursue (MS or MBA). This decision is conveyed to the LIM Graduate 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 5 additional courses and an internship. Students may take LIM 571 in lieu of the internship, as this course fulfills the internship requirement. The courses are taken at Union Graduate College during the four years of undergraduate study at Union.

Additional Cost

Students who elect to take the additional courses to achieve an MBA will be charged additional tuition by Union Graduate College

3 course tuitions- Spring of Senior Year
2 course tuitions- Summer 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 is outlines in the School of Management section of the catalog.

All LIM students will pay a graduation fee of $100. This replaces the $450 resource fee.

MS in Healthcare Management (Leadership in Medicine)

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

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 505 Health Operations Management
- HCM 656 Group Practice Management
- 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 553 Economics of Health
- LIM 571 Clinical Leadership Practicum

MS Clinical Leadership in Healthcare Management (ACPHS BS)

The BS Pharm Sciences and MS Clinical Leadership in Healthcare Management joint program is limited to students from Albany College of Pharmacy and Health Science (ACPHS). The objective of this program is to give ACPHS 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 ACPHS. Students must submit separate applications to Union Graduate College and Albany College of Pharmacy and Health Science *(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 12 required courses in the program. Students in the Pharmacy BS/MS Clinical Leadership in Health Management Program automatically waive three of these courses (HCM 620, HCM 656, and STA 501), utilizing ACPHS courses with a B- or better. In addition, UGC coursework may count for ACPHS 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
- BIE 510 Biomedical Ethics
- HCM 571 Clinical Leadership Practicum
- 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 (ACPHS PharmD)

(with Albany College of Pharmacy and Health Science)

The Pharmacy Doctorate and Master of Science Clinical Leadership in Health Management joint program is limited to students from Albany College of Pharmacy and Health Science (ACPHS). The objective of this program is to give ACPHS 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 ACPHS. Students must submit separate applications to Union Graduate College and Albany College of Pharmacy and Health Science *(Students interested in the joint MBA Program should refer to the School of Management section of this catalog).*

Program Requirements

There are 12 required courses in the program. Students in the Pharmacy Doctorate/MS Clinical Leadership in Health Management Program automatically waive three of these courses (HCM 620, HCM 656, and STA 501), utilizing ACPHS courses with a B- or better. In addition, UGC coursework may count for ACPHS 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
- BIE 510 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 Healthcare Management

The Master of Science Clinical Leadership in Healthcare Management stand-alone program is designed for students, who are not part of the ACPHS or LIM programs above. The objective of this is to give the student a better understanding of the healthcare 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 12 required courses:

LIM 502	Introduction to Health Systems
HCM 501	Health Systems Management
LIM 553	Economics of Health
BIE 510	Biomedical Ethics
LIM571	Clinical Leadership Practicum
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

Certificate Programs

The objective of the Bioethics Certificate Programs was 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.

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

Certificate in Bioethics: Specialization in Health Policy & Law
An online program which incorporates 4 online courses.

Certificate in Bioethics: Specialization in Clinical Ethics
A hybrid, online/on-site program which incorporates 3 online courses, an intensive one week on-site practicum and one- day of capstone.

Certificate in Bioethics: Specialization in Research Ethics
A hybrid, online/on-site program which incorporates 3 online courses, an intensive one week on-site practicum and one-day of the 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 elective:

- BIE 500 Proseminar in Health & Human Values (on-site)
- BIE 545 Reproductive Ethics
- BIE 555 Research Ethics
- BIE 590 Clinical Ethics (as an elective)

Specialization in Clinical Ethics

- BIE 530 Bioethics of the Law
- BIE 590 Clinical Ethics (online)
- BIE 610C Online Practicum
- BIE 620C On-site Practicum + day one of Capstone

Specialization in Research Ethics

- BIE 555 Research Ethics I (online)
- BIE 580 Research Ethics II (online)
- BIE 610R Online Practicum
- BIE 620R On-site Practicum + day one of Capstone

Job Placement

Because the MS in Bioethics program in the Center for Bioethics and Clinical Leadership is comprised of primarily working professional students who seek the master's degree to increase career options within their current organizations or to gain mastery in their discipline, few Bioethics students seek career services through the college. The department tracks career progress of their graduates.

The MS in Clinical Leadership and Healthcare Management degree is generally completed as part of a joint degree; the Leadership in Medicine program where graduates move directly to medical school and the Pharmacy Doctorate joint program where graduates typically pursue careers in clinical pharmacy. Graduates of these joint programs rarely seek employment assistance. Very few students pursue the MS degree outside of a joint program. Most are already employed in a clinical setting and seek the degree to advance their careers within exiting organizations.

COURSES OF INSTRUCTION

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 MST programs. Enrollment in these courses is by permission of School of Education Deans only.

Specific 2014-2015 course offerings are available below. The most recent listing is available online at 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 246. 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.
Prerequisite: PSY 010

EDS 500A. Field Observations (Middle School)
Fall, Winter, Spring; Gelzheiser (No fee)
50 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. This course is required for all MAT candidates.

EDS 500B. Field Observations (High School)
Fall, Winter, Spring; Gelzheiser (No fee)
50 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 500A or B must be conducted in a high needs school. This course is required for all MAT candidates.

EDS 511. Curriculum and Methods of Teaching English
Summer; Bell
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. This course is required for MAT English candidates.

EDS 512. Curriculum and Methods in Teaching Mathematics
Summer; Gandrow, Rosenburg
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. This course is required for MAT Mathematics candidates.

EDS 513. Curriculum and Methods in Teaching Languages
Summer; Gregory
Curricular planning and instruction for the teaching of second 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. This course is required for MAT languages candidates.

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. This course is required for MAT sciences candidates.

EDS 515. Curriculum and Methods in Teaching Social Studies
Summer; Reynolds
Curricular planning and instruction for the teaching of social studies 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. This course is required for MAT social studies candidates.

EDS 540. Psychology of Teaching
Summer; Remis, Snyder, Tulloch

Theories of learning and memory applied to instruction; models and research on teaching in secondary schools. Includes thematic analysis of relevant teaching topics such as special needs, differentiated instruction, literacy, second language learners and service learning. 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) This course is required for all MAT candidates.

EDS 540L. Microteaching Laboratory
Summer; Lasselle, Pirrone
Students prepare and present several six-30 minute lessons using a variety of instructional models. Models include anticipatory sets, discussion concepts, skills and inquiry with attention paid to themes such as special needs, differentiated instruction, literacy, second language, learners and service learning. Lessons are digitally recorded 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). This course is required for all MAT candidates

EDS 541. Essential Reading Literacy
Summer; O'Connell, Staff
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. This course is required for all MAT candidates.

EDS 544. Literacy for the Content Classroom
Winter; Wojcik
The theory and instructional approaches that support adolescent 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
Fall online; O'Connell
This seminar is required of MAT candidates and is taken concurrently with the internship. This course explores major aspects of special needs populations in schools, including students with disabilities, gifted and talented students, English Language learners, and students from poverty and minority backgrounds. In addition to legal requirements, this course includes projects to increase teachers' competence in working with special needs populations.

EDS 550B. Seminar in Instruction and Evaluation: Discipline, Assessment and Motivation
Winter; Snyder, Tulloch
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: Teacher as Change Agent
Spring; Snyder, Tulloch
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 such as Value added and Growth Models, Service Learning, Charter Schools 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; Gelzheiser
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.

EDS 570. Middle School: Students, Structures, and Standards
Summer; Reynolds ($1,100)
This course is designed to prepare students to teach 5th and 6th grade students effectively. Students will explore topics and teaching/learning methodology that are most appropriate for teaching students at the middle adolescence level, including team-teaching. Based on the theoretical and the practical, this course is designed to prepare teaching professionals to be competent, energetic, dedicated, and collegial practitioners at the middle adolescence level.

EDS 571. Middle Adolescence Literacy
Summer; Morley ($1,100)
This course is designed to prepare students to teach and develop literacy skills across the curriculum in grades 5 and 6. Students will review the latest research on the nature and development of reading writing, listening, speaking, viewing, and thinking as it applies to middle adolescence learners. Based on theoretical and practical aspects of teaching, it includes ways to support struggling readers in becoming strategic readers in all content areas. The overall goals of the course are to have teachers understand the effective elements of reading, writing, and expanded literacy instruction across the curriculum no matter what their area of content specialty.

580. MAT/MS for Teachers Project
Fall; Snyder
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 610. Reflective Teaching Practices
(Not offered 2014-2015)
Designed to teach participants how to become reflective practitioners of their own teaching. Participants will be immersed in an extended exercise in evaluating their own professional practice with the goal of improving student learning. (Not open to MAT/MST students.)

EDS 611. Learning to Teach to the Highest Standards
(Not offered 2014-2015)
A continuation of the work students have completed in EDS 610. Students will continue their focus on reflective teaching by analyzing specific teaching episodes within the context of their own teaching. (Not open to MAT/MST students.)

EDS 621. Mentoring I: Mentoring Interns and Novice Teachers
Fall; Ryan – Course for Certificate of Advanced Study
Designed for teachers who are thinking about or may have already mentored student teachers, interns, and/or novice teachers. Key questions will be analyzed and assessed in this course including the progressive needs of new teachers; practices that enhance a new teacher's induction into school, school culture, and a profession; effective feedback methods and similar topics are emphasized. (Not open to MAT/MST students.)

EDS 622. Mentoring II: Advanced Mentoring
Winter; Ryan – Course for Certificate of Advanced Study
Designed for teachers who have mentored student teachers, interns, and/or colleagues who are looking for a broader perspective on the topic. There are numerous skills introduced designed to ensure that a mentor has more professional skills to offer/share with new teachers and student teachers/interns. (Not open to MAT/MST students.)

EDS 623. Directing a Mentoring Program
Spring; Ryan – Course for Certificate of Advanced Study
Designed for teachers who have mentored student teachers, interns, and/or colleagues and are looking for a broader perspective in the field. They may be interested in directing or establishing a mentoring program. (Not open to MAT/MST students.)

EDS 624. School Law
Winter; Gerhardt – Course for Certificate of Advanced Study
Designed for teachers to learn how schools are regulated and the laws governing them. The course teaches the basic tenants of state and federal education law. Constitutional principles are explored and debated. (Not open to MAT/MST students.)

EDS 625. Teacher Leadership
Spring; Ryan – Course for Certificate of Advanced Study
The course is the capstone experience of the Certificate of Advanced Study in Mentoring and Teacher Leadership. The goal of this course and the Certificate is to develop

teachers into leaders in their classrooms, schools, districts, and beyond their fields of expertise. Prepares teachers with the skills needed to assume leadership roles within their schools and beyond and provides important support and stepping stones toward National Board Certification. (Not open to MAT/MST students.)

EDS 630. Introduction to Service Learning
(Not offered 2014-2015)
This course will provide students with hands-on knowledge of Service Learning as pedagogy and as a philosophy of learning. Service Learning makes mastering technical, conceptual and theoretical knowledge meaningful and memorable as it fosters young men and women who are prepared to accept real responsibilities and make real life decisions. Students will also consider the benefits of Service Learning to their students, the school and community. They will gain membership in a community of local and national Service Learning teachers who are skilled in utilizing the pedagogy and passionate about its efficacy. (Not open to MAT/MST students.)

EDS 631. Advanced Service Learning (New Course)
(Not offered 2014-2015)
Designed for those experienced in Service Learning pedagogy, this course will provide a community of peers to foster the integration of Service Learning into Capital Region classrooms. (Not open to MAT/MST students.)

BIO 553. Plant Biology
Spring; Hanchar
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; TBA
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 range of school settings.

CST 565. Introduction to Computers in the Classroom
(Not offered 2014-2015)
It is strongly recommended for all students in any education program who have little or no exposure and/or knowledge of computers and their basic applications. This course will emphasize tools in use in the secondary curriculum and classroom.

CST 570. Computers in the Language Arts Classroom
Spring; Mosall
This course is designed to be a practical application of current technologies to today's typical classroom.

CST 571. Computers in the Math & Science Classroom
Srping; Mosall
Special attention is given to emerging technologies currently in use in the secondary curriculum and classroom.

EGL 510. Writing and Teaching: A Process Approach
(Not offered 2014-2015)
The purpose of this course is to explore both the rationale for and the methods of teaching writing in secondary schools. In order to learn more about writing, you will choose a research topic relate to your discipline and do in-depth reading and research. You will also have to opportunity to develop writing activities, graphic organizers and assessment tools that will be helpful in your own classroom.

EGL 523. American Short Story
Fall; TBA
American Short Story presents an overview of the development of the short story in America from its beginnings in the early 1800s through contemporary exemplars of the genre.

EGL 581. Criticism
(Not offered 2014-2015)
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; Moore
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.

EGL 595. Reading Poetry
(Not offered 204-2015)
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 596: Reading American Fictions
(Not offered 2014-2015)

EGL 596 is designed to study in depth a few key American fictions selected for their relevance for teaching American literature, American history, and American culture. The books are central to understanding American character, American national values, and/or American experience. The term "fiction" is used broadly to define original texts that encompass novels, short stories, memoirs, autobiographies, speeches, and classic expressions of American history and culture.

ENG 598-599. Independent Study
(by arrangement)

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 frameworks 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
(Not offered 2014-2015)
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
TBA
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
(Not offered 2014-2015)
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; Caldera
Physics demonstrations are quick experiments that the physics teacher performs, in front of the class, in order to bring to light aspects of the lesson. Reasons for performing a classroom demonstration range from proving a concept, to helping with understanding of the physics, to visualization of an abstract phenomenon, to teaching about experimental physics, to entertainment. The purpose of this course is to help each future teacher to (a) select a collection of about ten experiments, (b) obtain the necessary parts/equipment required to build/create the demo, and (c) learn effective methods of performing the demonstration, both from a pathological and a theatrical perspective. This is an independent-study course that requires a weekly class meeting in addition to several hours per week spent outside the class for building the demos.

SCI 530. Analyzing Science /Math Theories
Winter; Tulloch
Analyzing Scientific Theories from Philosophical and Historical Perspectives. Students in this course will explore the development of major ideas in the life, Earth, and physical sciences by analyzing the scientific investigations and reasoning employed and how such developments were shaped by their technical, social and cultural contexts. Through such exploration, students will build a deeper and more contemporary understanding of how scientific knowledge is produced and structured and how scientific processes and thinking extend, revise, and reorganize such knowledge.

SCHOOL OF ENGINEERING AND COMPUTER SCIENCE COURSES

Specific 2014-2015 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
(no credit, no fee)
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 course is normally taken during the final year of the candidate's program.
Prerequisite: Approval of graduate advisor.

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 coursework 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 coursework 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 coursework 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, back propagation, 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 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
(Cross-listed as EER-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 Topics in Computer Logic and Mathematics, or equivalents. A knowledge of statistics is helpful.

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 560. Network and Systems Security

This course explores critical business challenges: how to protect an organization's computer networks, systems, applications and information. Students learn how to design procedures, protocols, and policies that address both engineering and human issues. Engineered security is examined through the application or cryptography, digital signatures and certificates, authentication protocol, firewalls, and intrusion detection. Also considered are security issues related to people's use of organization's networks and systems including policies and practices for password management and protecting privacy rights. Students also study options for maintaining business continuity in the event of a disruption of business operations. Specific case studies are used to highlight the choices that must be made to balance operational efficiency of business functions with protecting the business from the onslaught of security threats.
Prerequisite expertise: Networking protocols. The student should have taken a course in computer communications/networking and have programming experience such as C/C++, or JAVA or PHP. (The programming experience will allow the course to include hands on security project).

CSc 561. Software Quality Management
This course prepares students to apply a quality mindset to both the development process and the developed software. Students learn the theory and practice of quality assurance and testing computer software. Topics of study include the use of metrics to measure quality, software quality standards as a baseline for establishing and assessing quality, the effects of the economics on product reliability, and software testing practices (including test design, coverage, and tools). Students will study specific cases that highlight practical techniques and reveal the relationship between software quality management and meeting an organization's business objectives.

CSc 562. Business Intelligence
This course offers an interdisciplinary look at computing technologies in support of forming valuable business insights and making effective decisions. Students acquire knowledge of the conceptual basis for data warehousing (collection and organization o data in database management systems) and data mining (detecting of patterns in business data). Students then build the skills to extract business intelligence from collected and analyzed data and present it for use in business decision-making activities. Various practical applications are studies such as customer segmentation, Customer Relationship Management (CRM), Group Decision Support Systems (GDSS), and Executive Information Systems (EIS). Students will learn about trends in the use of business intelligence software and techniques and examine specific case studies. There will be an opportunity for students to develop their own application project.
Prerequisite expertise: database management systems.

CSc563. Managing Software Projects
This course prepares students to be effective at managing complex software development projects by learning concepts, processes, practical techniques, and tools for project management that support strategic organizational goals. Given the global nature of business today, an important element of this course is its emphasis on globally distributed projects. Students learn how to manage requirements that define a project, plan work tasks, schedule efficient use of people and resources, handle changes to the plan, manage risk and uncertainty, and drive to closure that meets quality expectations and address real-

world management challenges. Both tradition and agile development processes will be considered. Students will investigate and utilize a variety of online project collaboration tools and explore practices needed to manage distributed software project teams.

CSc 564. Systems Analysis and Design Methods
The application of information technology has extended to all quarters of the business world. While the nature and the scope of information systems vary widely depending on the business context, the fundamental knowledge underlying their development remains the same. This course aims to provide technology students with a solid understanding of the important methodologies and tools & techniques related to the development of information systems in a variety of contexts.

CSc 570. Enterprise Architecture
This course provides students with an understanding of the basic concepts and practices of Enterprise Architecture (EA). This is not a course on information systems development, web/application programming, database development, or network design. The course focuses on understanding how information technology resources can best be leveraged to support an organization's strategic goals and business requirements. Basic proficiency is developed in the understanding of several EA methodologies, number of governments and major corporations around the world, as well as the U.S. Federal Government's approach to EA. Students learn the theory and practice of EA through a combination of lectures, student-led class instructions, analysis papers, exams, and a written project with a verbal presentation.

CSc 571. System Modeling & Optimization
(i.e. 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
This course will provide an introduction to robotics. The course will cover basic algorithms necessary for motor control. Building on these methods we will discuss higher level navigation for mobile robots, as well as the sensing necessary for localization of the robot in its environment. Finally we will also examine the challenges of motion planning for jointed robots with many degrees of freedom.

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

CSc 583B. Business Data & Communications & Networking
This course is designed to convey the essentials of data communication networks. It will cover concepts, technologies and architectures. There will be practical lessons built into the semester's topics and assignments whenever possible. A single course cannot cover all possible networking topics and issues, so we will cover the major conceptual areas balanced with practical discussions and exercises. We will also discuss important network management topics such as domain management and security. Specifically, the following topics will be covered: Fundamentals of Networking Technologies, OSI Model, Physical Layer, Data Link Layer, Local Area Networks, Wireless Local Area Networks, Network/Transport Layers TCP/IP, Backbone Networks, Wide Area Networks, Application Layer, The Internet, Network Design, Network Management and Network Troubleshooting, Network Security, Voice over IP>

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

***Indicates Energy related course for MS Energy Systems**

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 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 522. Linear Control Systems**
(Cross-listed as MER 522)
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 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 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: A 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 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 551. Superconductivity**
Superconductivity is a complex physical phenomenon still at the forefront of research. This course is designed to provide a fundamental working knowledge of this technology, the importance and integration of material properties and a broad understanding/appreciation of the applications in the areas of power equipment and electronics. The course will also focus on active research and technological barriers for future applications.

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 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 570. Nuclear Engineering**
(cross-listed as MER 560)
The purpose of this course is provide students of various engineering disciplines a functional knowledge of nuclear engineering principles and those most important to the design of nuclear power generation systems. The course will focus both on the nuclear reactor core as well as plant systems. The intent is that students will gain a physical understanding of nuclear engineering principles as they relate to their own field of interest. Class participation will be highly encouraged and focused through the discussion of current events in the nuclear industry as well as proposed future nuclear technologies

EER 571. System Modeling & Optimization
(i.e. 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 and 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 Science and Hydrogen Engineering**
(Cross-listed as MER 580)
Introduce the student to the science and engineering of fuel cell technology. Emphasis will be on developing an understanding of different types of fuel cells, their applications, and the engineering of complete fuel cell systems. Elements of the class will include: electrochemistry; polymer materials science for proton exchange membrane (PEM) based systems; ceramics for solid oxide fuel cells; liquid-electrolytes for phosphoric acid and alkaline fuel cells; and other methods of generating power directly from a fuel and an oxidant. They system requirements of the fuel cell stack will be introduced to provide a complete picture of the technology. Other elements addressed during the course will include thermochemistry; electrochemistry; fuel processing or reforming; electrical & power management; polymer science and systems engineering. Developing an understanding of the proton exchange membrane fuel cell will be the primary objective. After completing this course, the student is expected to have an understanding of the technical needs, challenges, and opportunities of fuel cell systems. The overall essence of the class will be to address the essentials of fuel cells and fuel cell systems and related electrochemical systems. Elements of the entrepreneurial aspects of the industry will also be covered. Hydrogen will be discussed throughout the semester as it relates to fuel cells and the emerging changes in power generation models.
Prerequisite: Advisor approval
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***EER 580A. Photo Voltaic Engineering**
(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 Engineering**
(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 Engineering**

(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 Engineering**
(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 580G. Synchronous Electrical Generators**
(Cross-listed as MER 580G)
Course on fundamentals of design and analysis of power generators, such as those used in thermal power plants and wind turbines. The course will address the basic operating principles of the synchronous machine and consider configurations such as would field, permanent magnet, and doubly fed generators. Key topics will include understanding and analysis of the magnetics within the machine, losses and efficiency, thermal performance, mechanical behavior, operation on the power system, and key IEEE and IEC standards. Further topics will include the duty imposed on the machine during service as well as the duty it imposes on the turbine. The student is expected to develop a broad functional understanding of the current engineering technology, challenges, and future of generator technology.

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 and interest arises.

EER 590-595. Independent Study
(by arrangement)

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

Credit-Bearing Non Technical Electives

***EER 600. Disruptive Technology**
(Cross-listed as MER 600)
This course is designed to prepare the student to be able to efficiently evaluate potential disruptive technologies and their potential for application/commercialization. The course will cover such topics as the CO2 Mitigation, Solid state Energy Systems, Bio Energy and Fusion that have potential to impact the future. In order to cover this broad range of technical topics, the course will utilize multiple instructors that have technical depths as well as experience in the field.

***EER 601. Sustainability**
(Cross listed as MER 601)
The focus of this course is to build an understanding of what is meant by Sustainable Energy and to be able to analyze a range of different opportunities. The intent is to perform a value analysis on each opportunity in order to determine which are practical, on a variety of scales, while considering all aspects of the opportunity. Attention will be placed on efficiencies, scale, and impact of each opportunity as well as what limitations may exist.

***EER 602. Energy and The Law**
(Cross listed as MER 602)
Energy production and use are in a period of dramatic change as the world reacts to the need for a response to climate change, energy security and scarcity of resources. Yet energy production and the use are necessary drivers of the global economy and necessary for growth and prosperity. This course will introduce students to the legal, financial and structural issues that shape energy production, use and development in the United States, and particularly in New York. Students will learn about oil, natural gas, coal and nuclear energy production and use. The course will also cover cleaner alternatives such as energy conservation, hydro, wind, solar, and geothermal. The course will cover basic principles of rate regulation and public utilities, and division of jurisdiction between federal and state governments, and the key federal statues and regulatory regimes, with a focus on energy law in New York State. The course will discuss new challenges confronting electricity regulation (and energy law generally) as a result of emerging mandates for renewable energy and greenhouse gas emissions. This course will discuss the unique nature of energy and energy storage, the importance of reliability and the impact of intermittency on the grid. Finally, we will discuss how energy is financed and the impact of the production tax credit, the investment tax credits and other stimulus related incentives on energy production.

BOE 610. Fundamentals of The Business of Energy
An initial umbrella course designed to acquaint the student with the complexities of the present-day power system and how we arrived at this point. It will include a brief history of the industry evolution and will encompass various fuels, types of generation,

regulatory authorities, power transmission, distribution, control & dispatch, planning, power markets and revenue flows.

BOE 611. Planning and Operations of Power Systems
Operations and planning of power systems will introduce and discuss the decision process regarding generation types, fuels and transmission. Comparisons will be introduced establishing the difference between traditional vertically integrated utilities and unbundled resource suppliers. The principles of electric power systems will be studied along with the impact of deregulation.

BOE 612. Power Markets
This course will deal with the intricacies of the workings of the power markets (including gas). It will introduce and discuss the evolution from regulated pricing to market pricing. It will introduce and discuss market-based products necessary for reliable operation; hedging principles; and out-of-market products necessary for a fair and reliable market.

BOE 613. Deregulation/Restructuring
This course will explore the history of legislation, regulation and regulatory authorities in the development of the power industry and its impact on the economy and consumers. The evolution of the relationships between regulators and the regulated; the restructuring of the natural gas and electric industry over the last three decades; and the current regulatory status of both the infrastructure and power markets will also be studied.

BOE 614. Electric Power Industry Economics & Finance
This course will evaluate the weaving thread of economics and finance as an integral part of operations and strategic planning in the complex energy industry. It will investigate supplier economics and finance under regulation and deregulation environments. It will evaluate market transactions, payment paths, settlements, capital requirements, financial instruments, and procedures that are identified with the industry. It will review economic issues confronting power transmission owners/providers under regulated models and merchant function models. The course will identify and encourage a knowledge-based review of new technologies and green energy as they relate to financial and economic decision making. Energy policies, metering technology, micro-grids, government influences, fuels and storage will all be explored as they relate to various present and future economic and financial models.

BOE 615. Challenges to Upgrading Aging Infrastructure
This course will examine and evaluate the changing energy horizon as the industry embraces expanding technology, renewable energy, smart grid technology, etc.; to be exercised upon an aging infrastructure. The student will see the critical need for system knowledge and planning to continue to meet the needs and reliability of a sophisticated complex industry struggling to meet the needs of its customers and economic growth.

MS IN MECHANICAL ENGINEERING COURSES

***Indicates Energy related course for MS Energy Systems**

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 that 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, Linear Algebra and Differential Equations, and Mechanics of Materials or equivalent

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, 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: Calculus, Linear Algebra, Differential Equations, and Mechanics of Materials or equivalents

MER 507. Design for Manufacturing
This course will introduce the student to the principles of design for manufacturing. The course will begin by examining modern manufacturing operations including machining,

casting, forging, welding, brazing, soldering, finishing, heat treating, assembly, plastic materials processing, powder metallurgy, and specialized manufacturing processes. This section will also include electronics manufacturing, covering both through-hole technology and surface mount devices. For each manufacturing process, capabilities and limitations will be discussed and how they relate to part design and cost. Design for manufacturing principles will be examined, including how the designer affects manufacturing cost, lean manufacturing, six sigma, value stream analysis, manufacturing rate, the cost of quality, process flexibility, process simulation, and process economics.
Prerequisites: Strength of Materials, Mechanics or equivalent

MER 508. Fracture Mechanics
Modern theory of fracture in design. The ability to apply fracture mechanics principles to the design and analysis of engineering structures. Subjects treated include occurrence of fracture, fracture toughness, fracture resistance, and fatigue.
Prerequisites: Mechanics of Materials or equivalent

MER 509. Current Approach to Fatigue in Design
To provide engineering students with an understanding of fatigue mechanisms, design criteria and realistic examples to avoid and predict fatigue/durability failures in structures and components. The major emphasis of the course is fatigue of metals as applied to a variety of engineering structures and components, including both fatigue mechanisms and design applications. The course material is applicable to ground vehicles, buildings/bridges, aerospace vehicles, ships, nuclear pressure vessels, metal implants/prostheses and others. Both constant amplitude and variable amplitude fatigue life situations are considered.
Prerequisites: Calculus, Differential Equations, Strengths of Materials

MER 510. Advanced Dynamics
Analytical dynamics with engineering applications to particles and rigid bodies. Topics include three-dimensional kinematics and dynamics, Lagrangian dynamics.
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 or equivalent, Calculus, Differential Equations, Mat Lab helpful

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 of Materials or equivalent

MER 516 Finite Element Methods in Engineering

This course provides an introduction to the finite element method with an emphasis for solving structural engineering problems. It will cover a review of matrix algebra and the solution to simultaneous linear equations. It will then lead to an introduction of the stiffness method, which will include a review of the equations from elasticity. The method will then be applied to bar and beam equations, followed by 2D plane strain equations. Modeling guidelines will then be covered, along with axisymmetric analysis and isoparametric formulations; finishing up with three dimensional analysis.
Prerequisites: Calculus, Differential Equations, Strength of Materials or Equivalent

***MER 522. Linear Control Systems**
(Cross-listed as EER 522)
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.
Prerequisites: System Modeling and Analysis (Circuits and Systems or Dynamics of Physical Systems), Mat Lab/Simulink helpful

MER 525 Engineering Optimization
This course in engineering optimization studies techniques with applications in various aspects of engineering design and other disciplines including: concepts of design variables, constraints, objective functions, penalty functions, and Lagrange multipliers. Techniques for solving constrained and unconstrained optimization problems: classical approaches steepest descent, conjugate gradient, modified Newton, controlled random searches, etc. Applications and examples in the design of engineering components and systems will be presented.
Prerequisites: Calculus, Differential Equations, Mat Lab helpful

MER 532. Composites
This course provides 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.
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, Thermodynamics or equivalent, Calculus, Differential Equations

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

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: Thermodynamics or equivalent

MER 538. Fluid Dynamics of Turbo machinery
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: Thermodynamics, Fluid Mechanics 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: Basic Thermodynamics, Heat Transfer or equivalent

***MER 541. Thermal Energy Processes**
This course focuses on the analysis of thermal processes relevant to the renewable energy priorities of today's green economy. The underlying engineering principles of thermal processes, which make the best use of sustainable energy sources through proper acquisition, storage and conversion, will be considered. The course incorporates the fundamentals of thermodynamics and heat exchange necessary to understand the components and cycles that enable these thermal energy processes.
Prerequisites: Fluid Mechanics, Thermodynamics, Heat Transfer

MER 550. Conduction Heat Transfer
Study of the equations for steady state and transient heat conduction using analytical and numerical techniques.
Prerequisites: Fluid Mechanics and Heat Transfer

***MER 551. Superconductivity**
(Cross-listed as EER 551)
Superconductivity is a complex physical phenomenon still at the forefront of research. This course is designed to provide a fundamental working knowledge of this technology, the importance and integration of material properties, and a broad understanding/appreciation of the applications in the areas of power equipment and electronics. The course will also focus on active research and technological barriers for future applications.
Prerequisites: Calculus, Electromagnetics (basics), Quantum Mechanics helpful

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: Fluid Mechanics, Heat Transfer

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: Fluid Mechanics, Heat Transfer

***MER 560 Nuclear Engineering and Technology**
(Cross-listed as EER 570)
The purpose of this course is provide students of various engineering disciplines a functional knowledge of nuclear engineering principles and those most important to the design of nuclear power generation systems. The course will focus both on the nuclear reactor core as well as plant systems. The intent is that students will gain a physical understanding of nuclear engineering principles as they relate to their own filed of interest. Class participation will be highly encouraged and focused through the discussion of current events in the nuclear industry as well as proposed future nuclear technologies.

MER 571. System Modeling & Optimization (i.e. 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, Mat Lab helpful

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.
Prerequisites: Advisor approval

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 and 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.
Prerequisites: Applied Calculus and Differential Equations

***MER 580. Fuel Cell Science and Hydrogen Engineering**
(Cross-listed as EER 580)
Introduce the student to the science and engineering of fuel cell technology. Emphasis will be on developing an understanding of different types of fuel cells, their applications, and the engineering of complete fuel cell systems. Elements of that class will include: electrochemistry; polymer materials science for proton exchange membrane (PEM) based systems; ceramics for solid oxide fuel cells; liquid-electrolytes for phosphoric acid and alkaline fuel cells; and other methods of generating power directly from a fuel and an oxidant. The system requirements of the fuel cell stack will be introduced to provide a complete picture of the technology. Other elements addressed during the course will include thermochemistry; electrochemistry; fuel processing or reforming; electrical & power management; and polymer science and systems engineering. Developing an understanding of the proton exchange membrane fuel cell will be the primary objective. After completing this course, the student is expected to have an understanding of the technical needs, challenges, and opportunities of fuel cell systems. The overall essence of the class will be to address the essentials of fuel cells and fuel cell systems and related electrochemical systems. Elements of the entrepreneurial aspects of the industry will also be covered. Hydrogen will be discussed throughout the semester as it relates to fuel cells and the emerging changes in power generation models.
Prerequisite: Advisor approval.

***MER 580A. Photo Voltaic Engineering**
(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.
Prerequisite: Advisor approval.

***MER 580B. Turbine Engineering**
(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.
Prerequisites: Basic Structures, Thermodynamics, Fluids.

***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: Engineering Analysis, 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.
Prerequisites: Materials Science, Strength of Materials or equivalent.

***MER 580E. Solar Energy Engineering**
(Cross-listed as EER 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.
Prerequisites: Advisor approval

***MER 580F. Wind Energy Engineering**
(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 and transmission. Part 2: Focuses on technical understanding of Wind Turbine attributes such as structural, blade system, Uacelle system, electrical system, performance, and future opportunities.
Prerequisites: Advisor approval

***MER 580G. Synchronous Electrical Generators**
(Cross-listed as EER 580G)
This course covers fundamentals of design and analysis of power generators, such as those used in thermal power plants and wind turbines. The course will address the basic operating principles of the synchronous machine and consider configurations such as would field, permanent magnet, and doubly fed generators. Key topics will include understanding and analysis of the magnetics within the machine, losses and efficiency, thermal performance, mechanical behavior, operation on the power system, and key IEEE and IEC standards. Further topics will include the duty imposed on the machine during service, as well as the duty it imposes on the turbine. The student is expected to develop a broad functional understanding of the current engineering technology, challenges, and future of generator technology.
Prerequisites: Advisor Approval

MER 590-591. Independent Study
(by arrangement and with approval by academic adviser)

MER 592A. Masters Project
(by arrangement and with approval by academic adviser)
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 and with approval by academic adviser)
Continuation from MER 592A. 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).

Credit-Bearing Non Technical Electives

***MER 600. Disruptive Technology**

(Cross-listed as EER 600)
This course is designed to prepare the student to be able to efficiently evaluate potential disruptive technologies and their potential for application/commercialization. The course will cover such topics as the CO2 Mitigation, Solid state Energy Systems, Bio Energy and Fusion that have potential to impact the future. In order to cover this broad range of technical topics, the course will utilize multiple instructors that have technical depths as well as experience in the field.
Prerequisite: Advisor approval.

***MER 601. Sustainability**
(Cross-listed as EER 601)
The focus of this course is to build an understanding of what is meant by Sustainable Energy and to be able to analyze a range of different opportunities. The intent is to perform a value analysis on each opportunity in order to determine which are practical, on a variety of scales, while considering all aspects of the opportunity. Attention will be placed on efficiencies, scale, and impact of each opportunity as well as what limitations may exist.
Prerequisite: Advisor approval.

***MER 602. Energy and The Law**
(Cross-listed as EER 602)
Energy production and use are in a period of dramatic change as the world reacts to the need for a response to climate change, energy security and scarcity of resources. Yet energy production and use are necessary drivers of the global economy and necessary for growth and prosperity. This course will introduce students to the legal, financial and structural issues that shape energy production, use and development in the United States, and particularly in New York. Students will learn about oil, natural gas, coal and nuclear energy production and use. The course will also cover cleaner alternatives such as energy conservation, hydro, wind, solar, and geothermal. The course will cover basic principles of rate regulation and public utilities, and division of jurisdiction between federal and state governments, and the key federal statues and regulatory regimes, with a focus on energy law in New York State. The course will discuss new challenges confronting electricity regulation (and energy law generally) as a result of emerging mandates for renewable energy and greenhouse gas emissions. This course will discuss the unique nature of energy and energy storage, the importance of reliability and the impact of intermittency on the grid. Finally, we will discuss how energy is financed and the impact of the production tax credit, the investment tax credits and other stimulus related incentives on energy production.
Prerequisite: Advisor approval.

BOE 610. Fundamentals of The Business of Energy
An initial umbrella course designed to acquaint the student with the complexities of the present-day power system and how we arrived at this point. It will include a brief history of the industry evolution and will encompass various fuels, types of generation, regulatory authorities, power transmission, distribution, control & dispatch, planning, power markets and revenue flows.

BOE 611. Planning and Operations of Power Systems

Operations and planning of power systems will introduce and discuss the decision process regarding generation types, fuels and transmission. Comparisons will be introduced establishing the difference between traditional vertically integrated utilities and unbundled resource suppliers. The principles of electric power systems will be studied along with the impact of deregulation.

BOE 612. Power Markets
This course will deal with the intricacies of the workings of the power markets (including gas). It will introduce and discuss the evolution from regulated pricing to market pricing. It will introduce and discuss market-based products necessary for reliable operation; hedging principles; and out-of-market products necessary for a fair and reliable market.

BOE 613. Deregulation/Restructuring
This course will explore the history of legislation, regulation and regulatory authorities in the development of the power industry and its impact on the economy and consumers. The evolution of the relationships between regulators and the regulated; the restructuring of the natural gas and electric industry over the last three decades; and the current regulatory status of both the infrastructure and power markets will also be studied.

BOE 614. Electric Power Industry Economics & Finance
This course will evaluate the weaving thread of economics and finance as an integral part of operations and strategic planning in the complex energy industry. It will investigate supplier economics and finance under regulation and deregulation environments. It will evaluate market transactions, payment paths, settlements, capital requirements, financial instruments, and procedures that are identified with the industry. It will review economic issues confronting power transmission owners/providers under regulated models and merchant function models. The course will identify and encourage a knowledge-based review of new technologies and green energy as they relate to financial and economic decision making. Energy policies, metering technology, micro-grids, government influences, fuels and storage will all be explored as they relate to various present and future economic and financial models.

BOE 615. Challenges to Upgrading Aging Infrastructure
This course will examine and evaluate the changing energy horizon as the industry embraces expanding technology, renewable energy, smart grid technology, etc.; to be exercised upon an aging infrastructure. The student will see the critical need for system knowledge and planning to continue to meet the needs and reliability of a sophisticated complex industry struggling to meet the needs of its customers and economic growth.

SCHOOL OF MANAGEMENT COURSES

MBA students should generally complete core courses early in the program and electives late in the program. MBA Health students should take HCM500, HCM501, and HCM507 as early as possible in the program.

MBA COURSES

Specific 2014-2015 course offerings are available below. The most up-to-date course offerings are available at 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 course numbers indicates advanced courses.

PRELIMINARY COURSEWORK

MBA 001. Mathematics of Management
Online/On demand; Bowman ($650)
This course focuses on mathematics useful in modeling management processes. Fundamental concepts of differential and integral calculus and their applications to management are addressed.

MBA 002. Introduction to Probability
Online/On demand; Bowman ($650)
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. Prerequisite: MBA 001.

MBA 003. Microeconomics
Online/On demand; Lambrinos ($650)
This module in Microeconomics is a preliminary course for the MBA programs. It can be waived for students who have taken a course in Microeconomics at the undergraduate level. The workload is equivalent to half of a normal course so it can be completed at a normal pace in 5 weeks. The course, however, may be started at any time and completed at any pace with the only constraint being that all assignments associated with the module must be completed by June 30 each year. Students should not start the course prior to June 30 unless they are sure they can complete it by June 30. The course will cover demand and supply concepts, elasticity, the impact of taxation, production and cost theory, and perfect competition and monopoly market structures.

MBA 004. Macroeconomics

Online/On demand; Lambrinos ($650)
This module in Macroeconomics is a preliminary course for the MBA programs. It can be waived for students who have taken a course in Macroeconomics at the undergraduate level. The workload is equivalent to half of a normal course so it can be completed at a normal pace in 5 weeks. The course, however, may be started at any time and completed at any pace with the only constraint being that all assignments associated with the module must be completed by June 30 each year. Students should not start the course prior to June 30 unless they are sure they can complete it by June 30. The course will cover the definition of Gross Domestic Product, the Consumer Price Index, labor force definitions and concepts, productivity concepts, the Federal Reserve System, the aggregate demand-aggregate supply model of the economy and the impact of fiscal and monetary policy on the economy.

MBA COURSEWORK

MBA 506. Statistical Models for Management
Fall; Oppenlander/Winter; Oppenlander/Summer (online); 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 001 and MBA 002.

MBA 510. Financial Accounting
Fall (online); DeJoy/Fall; McDonald/Winter; DeJoy/Summer; Arnold
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; Williams/Winter, Online; DeJoy/Spring; DeJoy/Summer; Williams
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 525. Marketing Management and Strategy
Fall, Winter, Spring; Carlson
This course is primarily designed to provide students with knowledge relevant for managing current marketing efforts. Topics covered in this course include buying behavior of consumers and businesses, market segmentation, marketing environments, marketing research, positioning, product management, brand management, services management, pricing management, retailing/marketing channel management, and promotion management.

MBA 531. Operations Management
Fall, Winter; Kauffman / Spring; Bowman / Summer; Phillips
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. Business Driven Information Systems
Fall, Hybrid-blended online/on-site; Otto/Spring, Hybrid-blended online/on-site; Otto/Summer, Online; Otto
The course focuses on the business value that can be achieved when organization deploy information systems. 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, knowledge-based systems and social media. Participants will work in a group environment on cases, presentations, and a project report.

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. 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, Spring; 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 571. Ethical Principles of Business (1/2 course)
Fall, Clark / Winter; TBA
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 572. Legal Aspects of Business (1/2 course)
Fall; TBA / Winter; TBA
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, employment law, business organizations, government regulation and ethical considerations.
Not open to JD/MBA students.

MBA 606 Advanced Statistics and Data Visualization
Winter (online); Doganaksoy
This is an applied course on advanced statistical techniques that are commonly used in health care and business settings. The course will be based on case studies that incorporate typical challenges of a real-life application: Large data sets with mixed types of variables (e.g., qualitative and quantitative), missing data, lurking variables, correlated variables and uncontrolled variation. The course objective is to enable students to become effective users of advanced statistical techniques in support of business decision making. The topics covered will include logistic regression, multivariate analysis (principal components, clustering, discriminant analysis), partitioning analysis, and time series modeling. Students will learn to identify high impact application opportunities for each technique, plan and execute their own data-based investigations, apply the appropriate statistical modeling technique, and report their findings and recommendations. The role of effective data visualization as a key element in modern data analysis and presentation will be emphasized throughout the course.
Prerequisites: MBA 506

MBA 607 Data Architecture
Winter (online); Otto
Database management systems are standard tools that enable the storage and retrieval of data within modern information systems. Database concepts are now an accepted part of most computer science courses. These introductory units tend to concentrate on the use of relational database systems. This advanced module, in contrast, deals with implementation aspects of relational systems and provides students with the knowledge of the current enhancements to relational database systems, distributed database systems

(e.g. Hadoop) object oriented database and XML database systems. The course will also include an introduction into SQL to query relational databases.
Prerequisites: HCM 648 or MBA 545

MBA 610. - Fraud and Forensic Accounting
Spring (online): DeJoy
This MBA course is designed as a seminar. The primary goal of this course is to assist students in recognizing fraud, which will aid in the prevention and detection of fraud. This course will focus on the professional responsibility of accountants to act ethically. The course materials will discuss what a fraud is, how frauds can be committed, how frauds can be uncovered, and what accountants and business executives can do to prevent frauds from occurring in their organizations. We will use a variety of materials that were provided by the Association of Certified Fraud Examiners. In addition, students will analyze fraud case studies.

MBA 611. Personal Financial Planning
(Not offered 2014-15)
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 612. Advanced Management Accounting
Winter; Kabalian
This course is designed for students who have completed an initial course in Cost Accounting at the undergraduate level, or Management Accounting at the graduate level. Topics include budgeting, product costing including activity-based costing, accounting-based managerial and divisional performance metrics, and transfer pricing.
Prerequisites: MBA510, MBA512

MBA 613. Advanced Auditing and Research
Fall (online); DeJoy
This course is an advanced case and research-oriented study of topics in Auditing. Through a series of cases and related research, students will engage in the practice of auditing using real-world situations as the foundation for technical and theoretical discussions of issues facing the contemporary auditor. Cases will be chosen to reflect

current and emerging topics in the practice of public accounting, financial auditing, fraud investigation, and forensic accounting. Auditing communications tools and software-based audit techniques will also be emphasized.
Prerequisites: Undergraduate Accounting Degree or Permission of Instructor

MBA 618. Mergers, Acquisitions and Corporate Restructuring
Spring; Feng
Restructuring is essential to the long-term survival and prosperity of any corporation due to the ever-changing business conditions and regulatory environment. In this course, we will investigate internal restructuring – shifting resources from mature declining business activities to existing or new business activities with more attractive growth potential, as well as external restructuring, known as mergers and acquisitions (M&A's). M&A's can be broadly defined to include expansion through divestitures or sell-offs; various changes in corporate control and ownership, including going private and leverage buyouts; and rearrangements through recapitalization or bankruptcy. We will examine restructuring transactions, focusing on the significant impacts of restructuring on the corporation's assets, liabilities, and equity claims. We will learn and understand the economic motives for undertaking restructuring, such as enhancing competitive advantage, achieving strategic diversification, improving economies of scale and scope, reducing funding and transaction costs, and increasing market power.

MBA 619. Investments
Winter, Summer; 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.
Prerequisites: MBA 510, MBA 512, and MBA 517 or HCM 617

MBA 620. Investment Management
Spring; Johnson, Smirensky
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.
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 625. Marketing Communications
(Not offered 2014-15)
Given today's rapidly changing media environment, it is essential for managers to understand how marketing communications operate in the marketing mix of contemporary firms. In this course, we will spend the majority of the time talking about what lies behind the marketing messages people see every day. When most people think about advertising, they think about the creative side—the clever slogans and attention getting pictures and illustrations. However, it requires a lot of research, strategic thinking, and a thorough understanding of the consumer behavior for these clever slogans and graphics to be effective. In addition, we will learn about analytical methods and data sources to allow managers to choose media for reaching customers in the most cost-effective manner. Finally, the marketing applications of new media, internet communications, and social networking will be explored.
Prerequisites: MBA 525 or HCM 526

MBA 626. Marketing Research Techniques
Fall, Spring; Carlson
Marketing research is primarily conducted to reduce the amount of uncertainty managers would otherwise face in their decision-making. This course is designed to develop students' knowledge of marketing research by both exposing them to many major important issues involved with marketing research and requiring them to complete a marketing research report from start to finish. Topics discussed include research designs, data collection methods, survey development, measurement, sampling methods and sample size determination, descriptive statistics, parameter estimation, independent samples t-test analysis, correlation analysis, chi-square analysis, code sheet development, non-sampling errors, and ethics in marketing research.
Prerequisites: MBA 506 and 525 or HCM 526

MBA 627. Marketing High Technology Products
Summer; Boskin
This course will develop an understanding of strategies and practices involved in marketing technologically oriented products and services and to see how and why these strategies differ from marketing of non-technical products/services. In general, this course will focus on honing market analysis skills to leverage decision-making in the high-tech context. This course will enhance skills in analyzing industry trends, identifying threats and opportunities, designing suitable products and marketing strategies to best suit market/environmental conditions, market segmentation and analysis, and in assessing/monitoring a firm's relative advantage via competitive intelligence. Specific additional topics will include pricing, new product introduction, e-business, selling and sales management.
Prerequisite: MBA525

MBA 628. Consumer Behavior
Winter; Carlson
This course is designed to enhance students' understanding of consumers. Topics explored involve the many, many influences that may shape an individual's behaviors in the marketplace, including the impact of these influences on managerial decision-making situations. Observational research methods are also covered.
Prerequisite: MBA 525 or HCM 526

MBA 629. Money, Markets and Banking
Winter, Summer; Murtagh
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 or HCM 617
Prerequisites: MBA 510 and 512

MBA 632. Quality Systems Management
(Not offered 2014-15)
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 either MBA531 or HCM505

MBA633. The Role of Statistics in Business and Industry
Fall; Doganaksoy
This course will cover the key problems in business and industry (from product design to reliability assurance to field support) and then show how statistical approaches are used to address them. In addition to gaining exposure to real-life applications of basic statistical tools (e.g., regression analysis, interval estimation) that they have already learned, students will also gain exposure to more advanced tools (e.g., reliability modeling) which are commonly used by practitioners.
Prerequisite: MBA506

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.
Prerequisites: MBA 531 or HCM 505

MBA 640. Integrating eSystems into Global Businesses

(Not offered 2014-15)
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 of the underlying technology, which facilitates the data exchange. Participants will work in a group environment on cases, presentations, and a project report.
Prerequisites: MBA 545 or HCM 648

MBA 641. Business Process 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 or HCM 505

MBA 643. Systems Analysis & Design for Managers
(Not offered 2014-15)
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 by the successful design, development and implementation of a Computer Information System. Through the use of a semester-long, hands-on project, the students will have the opportunity to put the concepts learned into practice. Participants will learn the Unified Modeling Language and be introduced to the Unified Process Methodology. Both of these tools represent current industry standards for software engineering practice. During the course you will practice your skills through both individual and team assignments. The course will culminate with the development of an integrated systems project to demonstrate acquired knowledge.
Prerequisite: MBA 545 or HCM 648

MBA 650. Competing by Design
Summer, Online; 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 or HCM 501

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 or HCM 501.

MBA 653. Organizational Development and Transformation
(Not offered 2014-2015)
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 or HCM 501.

MBA 654. Labor Relations
Summer (online); 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 for labor relations will be discussed.
Prerequisite: MBA 551 recommended.

MBA 656. Ethical Issues in Management
(Not offered 2014-15)
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.
Prerequisite: MBA 500

MBA658. Women and Management

(Not offered 2014-2015)
Several scholars on organizational behavior have acknowledged that organizational cultures are "gendered." For example, although women and men have reached numerical parity in management overall, fewer women than men lead organizations, including the powerful Fortune 500 organizations. This course will examine the status of women in management and discuss issues that women managers face, including differences in leadership styles, obstacles to advancement, and pay, benefit and resource inequity. This course also addresses themes of ethical decision-making, authority, power and leadership and conflict in organizational life. We also discuss interconnections among equality issues: sex, race, class, age, sexual orientation and disability. Women managers in the Capital District will discuss their personal experiences with gendered organizations and apply the theories and empirical research presented in the readings to their personal experiences.
Prerequisites: MBA551 or HCM 501

MBA 660. Executive Decision Processes in Global Environments
Fall; Belasen
International management is one of the major challenges 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 multinational companies.
Prerequisite: MBA 551or HCM 501

MBA 661. International Finance
Fall; Feng
An analysis is made of international financial markets and the special problems and opportunities associated with the financial management of multinational firms with a special emphasis on the global emerging markets – from the traditional BRICS to the Frontier Markets. The international monetary and banking system (including the World Bank and IMF), balance of payments, and economic parity relationships are also examined. Foreign exchange and interest rate risk management, arbitrage, international equity and debt financing activities, derivatives, multinational capital budgeting, political risk, international taxation issues and diversity of financial reporting are considered. Coursework involves an intensive team research project focused on a specific country and the international financial exposures of select global corporations.
Prerequisites: MBA 506, 510 512 and 517 or HCM 617

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
Fall; Musits
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 or HCM 501

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
(Not offered 2014-2015)
Through a series of interviews/presentations by highly regarded leaders, this 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 steps new managers can take on the job to enhance their chances for 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 questions for the speakers, and helping to facilitate the speakers' presentations during class. Other course assignments will include preparation of case studies related to the various topical areas addressed during the course.
Prerequisites: MBA 551 or HCM 501

MBA 668. MBA China Study
Fall- Winter Break; Chudzik
This China Study course will give students a better understanding of "How to do business in China." The course will include a ten day visit to Shanghai and a three day optional visit to Beijing in the month of December. The visit will include visits to international U.S. and E.U. companies, Joint venture companies and Chinese companies in a variety of industries. Lectures/discussions on business-related topics from Professors from leading Chinese business schools will be part of the trip. Visits to top cultural places will also be included. Each student is required to conduct a research project, write a research paper and present their findings. The research paper will be completed in draft form before the trip in the fall term. In addition, two Harvard case study analysis will be done prior to the trip in the fall term on cases related to the research. The intent is that the December trip will offer the opportunity to perform primary research that will confirm or supplement the findings of the research. The final research paper and presentation will be done in the winter term. This will be a course for MBA credit and will be considered a Management advanced elective course designated as global. The course will be limited to approximately 15 students. Mel Chudzik who has lived and worked in China will be the professor and will accompany the students to China.

MBA674. Growing an Entrepreneurial Business
Winter: Musits, Cococcia
This course will focus on the challenges in growing a small to medium size business. The issues facing an entrepreneur when starting a new venture are very different than those he/she faces when growing an existing company or business. The course focuses on the unique issues an entrepreneurial leader faces as he/she looks to grow and scale their business. We will discuss and analyze the issues surrounding effectively scaling a business, and the impact that various decisions and initiatives have on the chance of success. How issues such as strategic marketing, team building and top-grading, financing, partnerships and leadership impact the growing business will be presented and discussed from the perspective of the business leader or entrepreneur. The course will include case studies, lectures, guest speakers, and discussions.

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 healthcare delivery firms. Prerequisite: MBA 551 or HCM 501.

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 healthcare delivery firms.
Prerequisite: MBA 551 or HCM 501.

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 or HCM 501.

MBA 681. Strategic Management and Leadership (MBA Capstone)
Winter, Spring; Chudzik
This required course provides students, near the completion of their MBA programs, with an opportunity to integrate all they have been learning. This course prepares students to be leaders and strategic thinkers as part of running a business. Students participate in a team, consulting with a real company to explore a business venture and develop a complete business plan for that venture. The business plan is intended to be realistic and executable by the client. This is not an academic exercise. Students learn by developing the business plan in phases over the term. Each team will work closely with a company and deliver a final product in the form of a written business plan and a summarizing presentation given before a panel made up of the CEO's of participating companies. Students must be near completing their MBA program and have completed the primary core courses. You with your advisor will decide if the prerequisites have been met.

MBA 682. Management Science
(Not offered 2014-2015)
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 Dean is required.

MBA IN HEALTHCARE MANAGEMENT COURSES

HCM 500. Introduction to Health Systems
Fall, Online; Strosberg/ Fall, On-site; Hammad
(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, On-site; 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 505. Health Operations Management
Winter and, Spring On-site; Smith
This course instructs the students in quantitative methods useful for analysis, improvement, and design of efficient and effective organizational processes within a health-care organization. Operations management (OM) is concerned with evaluating the performance of operating units, understanding why they perform as they do, designing new or improved operating procedures and systems for competitive advantage, making short-run and long-run decisions that affect operations, and managing the work force. Health systems OM is the analysis, design, planning, and control of all steps necessary to provide a service for a client. The course will involve readings from a selected text, review of published studies, exercises in internal and external benchmarking, and exploration of the tools and methods promoted at the national level.

HCM 507 Proseminar in Healthcare Leadership
Fall Pre 3-day; Huppertz & Smith
This Proseminar will provide students with an introduction to the role of management and leadership in healthcare. It includes a preliminary overview of the U.S. health system and changes occurring in the healthcare environment, as well as an introduction to ethical reasoning and ethics as they apply to the healthcare industry. Students will also learn communications concepts and skills required of leaders. The course will involve an intensive three-day on-campus residency, in which students will receive classroom lectures, participate in exercises, hear guest speakers from healthcare organizations, and complete projects as assigned. After completing the 3-day on-campus residency, students will continue the course independently and online, completing an assignment by the end of the Fall term. The Proseminar is designed to provide students with a framework with which they can interpret material to be covered in successive courses. In addition, they will have a unique opportunity to meet and network with healthcare leaders, faculty members, and student colleagues.

The course will require some online work beyond the 3-day intensive on-campus residence to be completed during the subsequent term.

HCM 510 Health Care Accounting and Finance
Fall (online); Gavin
The course covers use of financial statements and financial management in a regulated environment for taxable and tax exempt healthcare entities. Topics covered include: reading, interpreting and analyzing healthcare entity financial statements, time value analysis, valuing healthcare entities and assets, financial decision making and capital budgeting.

HCM 526. Health Systems Marketing
Winter, On-site; 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 601. Swiss Healthcare Delivery System
Fall – Winter Break; Otto
This Study tour will give Healthcare MBA students a better understanding of the healthcare delivery system in Switzerland. Students will have an opportunity to visit research hospitals, R&D centers, and pharmaceutical companies and learn firsthand about the unique characteristics of the system. We will also have seminars where experts in the field will discuss current issues in terms of healthcare delivery.

HCM 604 Hospital Analytics
Summer (online); TBA
An application of principles of analytics to hospital settings, problems, and strategic issues. Students will learn the array of alternative platforms hospitals use for collecting, storing, and distributing data within the hospital-health system setting, including data displays, analytical modules, and user interfaces. Students will also work with hospital data to answer clinical and strategic questions that senior leaders pose, and understand the promise and limitations of the data. Finally, students will be exposed to issues related to data communication and sharing among internal constituencies including owned physician practices and subsidiaries, related parties (e.g., PHO's and voluntary physicians), and Health Information Exchanges through RHIO's.

Prerequisites: MBA 606, 607, HCM 642

HCM 606 Payer Analytics
Summer (online); TBA
Health insurers and healthcare providers share a common mission of improving health however their means to achieving their mission vary materially. This course will focus on the analytics health insurers utilize to facilitate affordable, quality healthcare. We will discuss and analyze the approaches health insurers take to discover and communicate meaningful patterns in data from historical information reporting to future predictive modeling. Upon completion of this course, the student ill have been exposed to key payer analytic frameworks and tool sets used to drive success within a health insurer.
Prerequisites: MBA 606, MBA 607, HCM 642

HCM 607 Health Care Operations Research
Spring (online); Bowman
Health Care Operations Research examines several of the Operations Research models most widely used in the Health Care industry. The primary goal is to enable students to become productive consumers of Operations Research for the support of Health Care Management decision making. Students will learn to recognize opportunities for Operations Resarch analyses, perform basic analyses, report their findings in non-technical terms, and direct or interact with more complex analyses. Operations Research methodologies covered will include Linear Programming, Queuing Theory, Simulation, and Decision Analysis. Applications to staffing, scheduling, capacity planning, facility layout, facility location, and inventory management will be covered.
Prerequisites: MBA 002

HCM 609 Consumer Analytics
Summer (online); Haimowitz
This course provides a practical overview of how to design and implement modern digital customer relationship marketing.
Topics to include: customer insight mining, social media and search analyses, segmentation, customer database design, promotional media selection, campaign operations, sales force automation, digital engagement analytics, and ROI measurement. Textbook and other readings will be supplemented by a small-group case study project that students develop throughout the term.
Prerequisites: MBA 506, HCM 648 or MBA 545

HCM 617. Healthcare Finance
Winter On-site, Spring Online; Gavin
This course covers financial management in a regulated healthcare environment. Topics include cost-finding and third-party reimbursement, contemporary issues in healthcare 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, On-site; 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 healthcare, 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 642, Data Analytics and Business Intelligence
Spring (online); Otto
This course provide an introduction to Data Analytics and 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. The focus in this course is on data and text mining, using an appropriate software application for the organization, retrieval, and modeling of large structured and unstructured data sets.
Prerequisites: MBA 606, MBA 607

HCM 648. Health Informatics
Winter, On-site; Otto/Summer, Online; Otto
This course will introduce students to the concepts and practices of health informatics. Topics include: a) an introduction to information systems and specifically to the health informatics field; b) major applications and commercial vendors; c) decision support methods and technologies; d) system analysis, design, implementation, and evaluation of healthcare information systems; and e) new opportunities and emerging trends.

HCM 650. Structural Dynamics in Healthcare Systems
Fall, On-site; Strosberg
Application of organization theory to healthcare 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, Online, Summer, On-site; Sciemeca
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
Spring, Online, Summer, On-site; Zambri
(Cross-listed as LIM 674)
This course is designed to familiarize students with basic legal issues involved in managing healthcare 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 and Managerial Epidemiology
Spring, On-site; Colacino
(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 healthcare organizations.
Prerequisites: HCM 500 and 501.
Prerequisites for LIM program: LIM 500 & LIM 503

HCM 681. Strategic Issues for Healthcare Organizations (Health Capstone)
Spring Pre On-site; Huppertz and Smith
This course is designed to integrate the concepts and skills associated with managerial problem-solving learned throughout the MBA in Healthcare Management program. Students analyze case studies addressing the strategic realignment of health service organizations in today's healthcare 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 (LIM**,** Capstone)
Summer On-site; Huppertz,
This course is designed to integrate the concepts and skills associated with managerial problem-solving learned throughout the graduate healthcare management courses of the joint Union College/Union Graduate College/Albany Medical College 8-year Leadership in Medicine program. Students analyze case studies addressing the strategic realignment of health service organizations in today's healthcare environment. A variety of expert practitioners present their views on this topic.

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 Dean is required.

STA 501. Introduction to Probability and Statistics
Winter, On-site; Eno
This course studies the fundamentals of applied probability, most important distributions, acceptance sampling, confidence intervals, point estimation, and tests of hypotheses.
Open to LIM or MSCL Students

CENTER FOR BIOETHICS AND CLINICAL LEADERSHIP COURSES

MS IN BIOETHICS COURSES

BIE 500. Proseminar in Health and Human Values
Summer (one- week in Summer), On-site, Union Graduate College w/ Clinical Visit to Icahn School of Medicine at Mount Sinai; *Baker, Rhodes, Philpott-Jones*
An intensive eight-day 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, Online; 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, Online; Strosberg
This course provides an understanding of the public policy-making process and the political and regulatory environment in which healthcare organizations function. It also provides an understanding of managerial processes, politics, and structure of the healthcare 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 525 Public Health Ethics
(Elective for Clinical Ethics and Research Ethics Specializations, required for Policy specialization, Required for Policy.)
Winter, Online; Bloom
In this course, students learn about ethics and public health, and the ways in which these two fields interconnect. The course focuses on ethical theory and the discipline and history of public health, using case studies to illustrate the application of ethical theory to public health practice.

BIE 530. Bioethics and the Law
Spring, Online; Ouellette, Meyer

This course is designed to familiarize students with major legal issues and legal concepts relevant to bioethics.

BIE 533. Neuroethics:
Spring of alternate years, Online; Gligorov (1/2 course elective)
The course will aim to familiarize the students with the most pertinent issues in Neuroethics, but will emphasize those issues which have some immediate application in clinical settings, such as criteria for brain death, the ethics of enhancement and justification of memory manipulation. The overall objective of the course is to demonstrate continuity between neuroethics and other areas of bioethics, and to identify the application of major ethical principles to this new branch of ethics.

BIE 535 - Medicine and Social Justice
(Required for Policy Track, elective for clinical Ethics & Research Ethics Tracks)
Fall, Online; Rhodes, Kleinman, Mendis
This course examines issues of social justice in medicine, beginning with a review of classical (Aristotle) and contemporary (Rawls) works on political philosophy, ethics and justice. Students will also read some of theoretical work of authors who focus their attention on justice in medicine (including Daniels and Menzel). Building on these philosophic underpinnings, students will then explore the issues that lie at the heart of justice in medicine: the right to health and healthcare, aggregation and utility, personal responsibility, prioritarianism, and the allocation of medical resources.

BIE 543- Jewish Bioethics
Spring of alternate years, Online; Zohar (1/2 course elective)
The first part of this course aims to explain the scope and nature of "Jewish Bioethics", presented in the broader context of the Jewish tradition of normative discourse. Employing specific examples with relevance to contemporary bioethical issues, the contours of that tradition will be traced from the Bible through Talmudic and medieval texts to modern works. We will then illustrate the content and workings of Jewish Bioethics through two fields in which its teachings are particularly distinct, related in different ways to the fundamental belief that humans are created in the Divine Image: (a) Beginning of life (including the status of the embryo, assisted reproduction and stem-cells, with a special emphasis on questions of gender) and (b) End of life (including the tradition's powerful emphasis on saving and extending life, the debate over "brain death", and cadaver organ transplantation).

BIE 545. Reproductive Ethics
Summer of alternate years, Online; Steinbock (elective)
An investigation of the ethical and legal problems associated with new reproductive technologies and genetics.

BIE 555. Research Ethics
(elective for Clinical Ethics track, Required for Research Ethics track)
Fall: Online: Gligorov & Philpott-Jones
Analyze individual cases, make informed and reasoned judgments about the proper conduct of research, develop the skills and knowledge base essential to designing and developing education in, and professional awareness of, research ethics.

BIE 563 Pediatric Ethics:
Spring of alternate years, Online; Frank (1/2 course elective)
In this course we will cover standards for surrogate decision making for children; ethical issues with respect to very premature neonates; withholding and withdrawing life-sustaining care; genetic testing and screening; and adolescent confidentiality, truth-telling, and decision making. This course will include guest participation by members of the Icahn School of Medicine faculty, including experts in neonatology, adolescent health, genetics, and pediatric oncology.

BIE 565. Empirical Research Methods in Bioethics
Fall, Online; Oppenlander (Elective)
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 566. Foundations of Empirical Bioethics
Fall, Online: Oppenlander (1/2 course)
This course covers the basic process and methods encountered in conducting empirical research in bioethics. A key objective is to develop an understanding of commonly encountered study designs and statistical methods needed to understand published empirical literature in bioethics and healthcare. The course focuses on developing skills to critically evaluate the quality and applicability of empirical research studies. Foundations of Empirical Bioethics course is targeted for those students with limited background in statistics.

BIE 567. Survey Research Methods
Fall, Online, Oppenlander (1/2 course)
This course will cover the survey research process including planning, design, execution, and analysis. Careful construction of questions is essential to eliciting information from human subjects that will meet the objectives of research studies. Good practices in questionnaire construction and survey execution that will lead to the efficient collection of high quality data are covered. The course will focus on the practical aspects of survey research by developing and executing various types of data collection instruments and analyzing the resulting data.

BIE 568. Empirical Methods in Healthcare Policy
Fall, Online, Oppenlander (1/2 course)
This course is intended for those students that have prior background in reading empirical literature or in conducting empirical research. Methods will be presented that are more advanced than those found in standard undergraduate statistics courses.

BIE 569. Statistical Methods in Healthcare
Fall of alternate years, Online; Oppenlander (1/2 course)
The purpose of this course is to cover statistical topics applicable to healthcare settings, not typically covered in an introductory statistics course. These topics include study designs commonly applied in healthcare, measures of disease frequency and health risk, power analysis, and non-parametric statistics.

BIE 570 –Bioethics Policy: **Foundations:**
(Elective for Clinical Ethics and Research Ethics Specializations, required for Policy specialization)
Fall, Online, Meyer
This course will address *prospective rules* designed to govern *populations* and *categories of cases.* Often, bioethics policies have the force of law (e.g., statute, agency regulation, court precedent); at other times, however, they are voluntarily adopted by institutions or groups (e.g., hospitals, insurers, IRBs, research funders, the AMA).

This course focuses on the moral philosophical and behavioral foundations of contemporary bioethics policy and draws on concepts from philosophy, economics, and psychology that are increasingly used in policymaking in both the U.S. and the U.K.

BIE 573 - Interpersonal Skills and Communication:
Spring of alternate years, Online (1/2 Course, elective)

BIE 575 - Bioethical Issues at the End of Life:
Summer of alternate years, Online, (6 weeks; full 3.3 master's credits, All Specializations) Steinbock (elective)

BIE 580. Research Ethics II
(required for Research Ethics Track, elective for Clinical Ethics and Policy track)
Winter, Online, Philpott-Jones
Teaches students about the ethics and policies governing scientific research, particularly research involving human participants or animal subjects. This course builds upon the knowledge and themes introduced in BIE-555 (Research Ethics I). Research Ethics II covers these topics in greater depth and explores the key US and international laws and policies that regulate the design, conduct, and oversight of trials involving human participants or animal subjects. In addition, students examine in-depth specific areas or types of biomedical research that are potentially controversial or ethically problematic.
Required for research ethics track, elective for clinical ethics track
Prerequisites: BIE 555

BIE 590. Clinical Ethics
(required for Clinical Ethics Track, elective for Research Ethics and Policy track)
Fall, Online; Gligorov, Icahn School of Medicine at Mount Sinai staff
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 610C. Online Practicum in Clinical Ethics
Winter, Online; McCulhough
A supervised practical experience in clinical ethics designed to teach skills of clinical ethics consultation.
Prerequisite: BIE 590.

BIE 610P. Online Practicum in Policy
Winter, Online; Meyer

This course is designed as an opportunity for students to develop and refine the skills of policy analysis that they have learned in prior courses — in particular, in the prerequisites to this course — and to apply them to a range of current issues in bioethics policy. To be as relevant as possible to students with diverse interests and career aspirations in bioethics, the course covers a broad range of policy issues in the biosciences, including both public and "private" bioethics policies. (online, Spring)

BIE610R. Online Practicum in Research Ethics
Spring, Online; Philpott-Jones
A supervised practical experience in research ethics designed to teach specific skills. Exposes students to the process of ethical review of research involving human volunteers or animal subjects, and helps students develop some of the basic skills that a working research ethics professional needs. Through online discussion and participatory exercises, students gain a practical understanding of: (a) research ethics committee structure and function, (b) applicable state and federal regulations regarding the conduct of research involving human volunteers or animal subjects, and (c) relevant organizational and management skills needed to lead a research ethics committee. In addition, students are taught practical skills in qualitative and quantitative research, report and grant writing, and bioethical training and education.
Prerequisite: BIE 580.

BIE 620C. On-Site Practicum in Clinical Ethics
Spring, On-site, Icahn School of Medicine at Mount Sinai
A supervised practical experience in clinical ethics designed to teach skills in clinical ethics consultation. (One week during Spring Term)
Prerequisite: BIE 590. Co-Req with BIE 610C

BIE 620R. On-Site Practicum in Research Ethics
Spring, On-site, Icahn School of Medicine at Mount Sinai
A supervised practical experience. Helps students develop and refine the practical skills introduced in BIE 610R (Online Research Ethics Practicum) through hands-on experience. These skills include: teaching and education, review and oversight of institutional research projects involving human volunteers or animal subjects, and sound management of the research endeavor, including organizational management and policy analysis, arbitration, and mediation(One week during Spring Term)
Prerequisite: BIE 580. Co-Req with BIE 610R

BIE 630 & BIE 640. Masters Project I & II
Winter and Spring, Online; Frank & Individual faculty supervisors
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 (All Specializations)
Spring, On-site, Union Graduate College

Capstone practicum in which students demonstrate their mastery of clinical ethics or research ethics. Each student presents their Masters Project. (One week during Spring Term)

MS IN CLINICAL LEADERSHIP COURSES

LIM 500. Introduction to Health Systems
Fall; TBD
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 503. Healthcare Leadership
Winter; 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. Health and Human Values
Summer (one-week in summer), Union Graduate College; Baker, Philpott-Jones
The seminar in Health & Human Values I & II (LIM 544) is an intensive eight-day introduction to current topics in clinical ethics and bioethics. The courses are taught seminar style at Union Graduate College. Students are given an overview of current issues in bioethics.

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 healthcare 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 healthcare 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 healthcare 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 680. 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 healthcare organizations. The second focuses on understanding and applying basic epidemiological methodologies to the healthcare management arena. Prerequisites: HCM 500 and 501.

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SCHOOL OF EDUCATION FACULTY

INTERIM DEAN

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FULL TIME

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Participating

Bruce Tulloch, Dean, School of Education and Participating Partner of Education; BS 1968, Cornell University; MS 1972, University at Albany; MST 1973 Union College; ED 1981, University at Albany

PART TIME

Charles Batson, Associate Professor of French; BA 1987, Furman University; MA 1989, University of Virginia; PhD 1997, University of Illinois

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FULL TIME

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PART TIME

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