

MTM CURRICULUM INFORMATION



VILLANOVA
School of Business

Leadership Challenge (1 credit)

6 Graduate Business Courses (21 credits)

- Economic Analysis
- Accounting Information & Decision Making
- Leadership & Teambuilding
- Decisions in Marketing
- Corporate Finance
- Global Strategic Management (6 credits)
Includes week-long travel experience

6 Graduate Engineering or Computing Courses (18 credits)

Courses vary depending on the student's selection of one of the following tracks. Please contact you faculty advisor for guidance. See following pages for track-specific curricula for Computing and Engineering.

- Web-based Technology and Commerce (Computing)
- Software Engineering (Computing)
- Knowledge-based Systems (Computing)
- Electrical Engineering (Engineering)
- Computer Engineering (Engineering)
- Civil Engineering (Engineering)
- Mechanical Engineering (Engineering)

2 Electives (6 credits)

Elective offerings change each semester. Please check Novasis for current offerings.

- 1 Business Elective (3 credits)
- 1 Computing or Engineering elective (3 credits)

See below for Computing and Engineering Tracks

COMPUTING TRACK



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To pursue the computing track you are required to have a Bachelor's degree in computer engineering, computer science, or closely related field.

Required Computing Credits

6 Required Graduate Computing Courses (3 credits each)

Upon enrolling into the program, you must declare your interest in one of the following specialty tracks. You will earn a certificate in this specialty area in addition to the MTM degree.

Web-based Technology	Software Engineering	Knowledge-based Systems
Database Systems	Database Systems	Database Systems
Web Technologies (new)	Software Engineering	Artificial Intelligence
Multimedia Technology	Software Design and Evolution	Expert Systems
System Programming or Distributed Computing	Requirements Engineering	Data Mining and Database Programming
Computer Networks	Object Oriented Design and Programming OR User/System Interface Design	Neural Networks or Fuzzy Logic or Topics in Intelligent Systems
Independent Study	Independent Study	Independent Study

ENGINEERING TRACK



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Required Engineering Credits

Note: All MTM students on the Engineering Track are required to take EGR 7001 and EGR 7003.

Civil Engineering Track

The Department of Civil and Environmental Engineering (CEE) offers graduate courses in five CEE disciplines: environmental, geotechnical, structural, transportation and water resources engineering. MTM students select their courses from any one of the disciplines or combine two of the disciplines for an interdisciplinary focus. Each MTM student develops a plan of study in consultation with his or her CEE advisor to ensure that the sequence of courses complies with both the student's interests and CEE requirements. Students who wish to pursue an MSCE degree must fulfill all the MSCE degree requirements as prescribed in the College of Engineering Graduate Catalog. Two samples of typical plans of study are listed below.

Structural Engineering Focus

- EGR 7001 Management of Technology & Innovation
- EGR 7003 Systems Engineering Elements
- CEE 7401 Wood and Masonry Structures
- CEE 8434 Structural Dynamics
- CEE 8437 Structural Steel
- CEE 8438 Structural Connections
- CEE 8442 Advances Structural Mechanics

Water Resources/Environmental Engineering Focus

- EGR 7001 Management of Technology & Innovation
- EGR 7003 Systems Engineering Elements
- CEE 7502 Introduction to Environmental Engineering Processes
- CEE 7511 Microbiology for Environmental Engineers
- CEE 8501 Surface Water Hydrology
- CEE 8503 Open Channel Hydraulics
- CEE 8508 Urban Hydrology and Storm Water Management

Other plans of study can be discussed with your faculty advisor.

Chemical Engineering Track

The following is a sample listing of courses that can be taken if you are enrolled in the MTM Chemical Engineering track. A specific plan of study will be developed for you based on consultations with the Chemical Engineering Department graduate advisor, both for MTM and MTM/MSCHE students.

- EGR 7001 Management of Technology
- EGR 7003 Systems Engineering Elements
- CHE 8550 Chemical Reaction Engr I
- CHE 8558 Process Design I
- CHE 8565 Heat Transfer
- CHE 8571 Separation Processes I
- CHE 8572 Separation Processes II

Electrical Engineering Track

- EGR 7001 Management of Technology
- EGR 7003 Systems Engineering Elements
- ECE 8072 Statistical Signal Process
- ECE 8700 Communications Systems Engineering
- ECE 8770 Topics in Digital Communications
- ECE 8772 Satellite Communication Systems
- ECE 8247 Multimedia Systems

Mechanical Engineering Track

Listed below are just a few on the courses that can be taken if you are enrolled in the MTM Mechanical Engineering track. MTM ME students are encouraged to select from any of our graduate course offerings (7000 and 8000 level) to best match their particular interests in the broad field of mechanical engineering. ME courses should be selected based on career goals and personal interests in consultation with the ME graduate program chairperson.

- EGR 7001 Management of Technology
- EGR 7003 Systems Engineering Elements
- ME 7205 Advanced Dynamics
- ME 7002 Continuum Mechanics
- ME 8130 Radiation Heat Transfer
- ME 7600 Thermal Management of Electronics
- ME 7402 Computer Aided Production Planning

Computer Engineering Track

- EGR 7001 Management of Technology
- EGR 7003 Systems Engineering Elements
- ECE 8425 Microprocessors and microcomputers
- ECE 8473 Operating systems and Programming
- ECE 8405 Computer Organization and Design
- ECE 8007 Matrix Theory
- ECE 8476 Computer Communications Security