

MECHANICAL ENGINEERING MASTER OF SCIENCE

*** Program pending final approval of Massachusetts Board of Higher Education ***

Leading to a Master of Science Degree in Mechanical Engineering

The Master of Science in Mechanical Engineering (MSME) program is designed to provide advanced experience with post-graduate mechanical engineering principles and skills. The program has a thesis option with 31 required credit hours, and a non-thesis option with 34 required credit hours. Either option has the students undertake an individualized engineering development experience, either as a two-course Thesis, or a one-course Master Project. All students are required to complete a one-credit Professional Perspectives course to increase exposure to recent developments and to aspects of professionalism. All students are required to complete a three-course concentration, either one of the predefined concentrations or an individualized concentration. Students may be either full-time or part-time. Although some classes or parts of classes may be able to be remote, the program is designed as an on-campus program. Some of laboratory exercises require use of physical apparatus in the labs, so students will need to be on-campus for those courses. The expected background of the students is a bachelor's degree in mechanical engineering or another related engineering bachelor's degree.

Program Educational Outcomes

Program educational objectives are the accomplishments graduates are expected to achieve during the first few years after graduation with the M.S. degree.

Graduates with an M.S. in Mechanical Engineering will have the following behavioral characteristics.

- Work toward alleviating problems, challenges or risks in application fields related to mechanical engineering.
- Apply engineering methodology with confidence and humility to develop innovative and effective solutions in a professional and ethical manner.
- Pursue professional development to meet and adapt to emerging and evolving engineering challenges.

Student Outcomes

In order to fulfill its Mission, Wentworth has established the following Graduate Student Learning Outcomes. The Office of Institutional Effectiveness at WIT developed these Outcomes to be suitable for all graduate programs at WIT. These Outcomes were considered appropriate for the proposed program and were adopted.

Upon graduation, Wentworth Institute of Technology Graduate students will demonstrate:

- Core Knowledge: advanced knowledge in a specialized area consistent with the focus of their graduate program, including critical thinking and problem solving
- Scholarly Communication: advanced proficiency in written and oral communication, appropriate to purpose and audience.
- Professionalism: advanced intellectual and organizational skills of professional practice, including ethical conduct.

- Research Methods and Analysis: quantitative and qualitative skills in the use of data gathering methods and analytical techniques used in typical research that is consistent with the focus of their graduate programs

The program has a thesis option with 31 required credit hours, and a non-thesis option with 34 required credit hours. Either option has the students undertake an individualized engineering development experience, either as a two-course Thesis, or a one-course Master Project. All students are required to complete a one-credit Professional Perspectives course to increase exposure to recent developments and to aspects of professionalism. All students are required to complete a three-course concentration, either one of the predefined concentrations or an individualized concentration. The course requirements to complete the MSME degree are shown in this curriculum table. Students must complete the course requirements with a cumulative GPA of at least 3.0, following Wentworth graduate school policies.

Thesis Option

Course	Title	Credits
Mathematics Requirement		
MATH5800	MATHEMATICAL METHODS	3
or		
ELEC5850	ENGINEERING NUMERICAL METHODS	3
Management Requirement		
MGMT7175	ENGINEERING INNOVATION & ENTREPRENEURSHIP	3
or		
MGMT7100	PROJECT MANAGEMENT APPLICATIONS	3
Professional Perspectives Requirement		
ENGR7101	PROFESSIONAL PERSPECTIVES	1
Graduate Electives Requirement		
Graduate Electives: 6 three credit courses		18
MECH 5000 or 6000 Level courses or other graduate courses with advisor's permission.		
At least two electives must be 6000 level		
THESIS OPTION		
ENGR7100	THESIS I	3
ENGR7200	THESIS II	3
TOTAL CREDITS		31

Non-Thesis Option

Course	Title	Credits
Mathematics Requirement		
MATH5800	MATHEMATICAL METHODS	3
or		
ELEC5850	ENGINEERING NUMERICAL METHODS	3
Management Requirement		
MGMT7175	ENGINEERING INNOVATION & ENTREPRENEURSHIP	3
or		
MGMT7100	PROJECT MANAGEMENT APPLICATIONS	3
Professional Perspective Requirement		
ENGR7101	PROFESSIONAL PERSPECTIVES	1
Project Requirement		

Course	Title	Credits
ENGR7000	MASTER PROJECT	3
Graduate Electives Requirement		
Graduate Electives: 7 three-credit courses		21
MECH 5000 or 6000 Level courses or other graduate courses with advisor's permission.		
At least two electives must be 6000 level		
TOTAL CREDITS		31