

# ENGINEERING MANAGEMENT (MS)

## Program Overview Master of Science Degree

The master's program in Engineering Management (MSEM) at New England Institute of Technology is designed for engineering professionals who desire to advance their technical and managerial knowledge in the engineering industry. The program emphasizes the relevance of continuous learning to personal and professional growth through the combination of advanced traditional engineering management courses and an integrated management core.

The MSEM program is designed to equip current or aspiring engineering managers with the necessary tools to make thoughtful decisions that affect an organization's management needs. The program's mission is built around central themes that drive modern engineering industry operations: best practices of leaders and management professionals in the engineering industry, engineering project accounting and finance, engineering law, and the software applications that support the engineering management profession.

Successful graduates may be able to advance their careers by qualifying for positions such as project managers, project executives, directors of engineering operations, and comparable leadership roles in the engineering management field.

## Curriculum

Course	Title	Quarter Credit Hours
<b>Term I</b>		
EMG 512	Systems Engineering	4
MGM 533	Advanced Project Management	4
<b>Quarter Credit Hours</b>		<b>8</b>
<b>Term II</b>		
EMG 511	Human Centered Design Thinking	4
MGM 514	Leadership	4
<b>Quarter Credit Hours</b>		<b>8</b>
<b>Term III</b>		
EMG 522	Quantitative Business Analysis	4
MGM 504	Managerial Finance	4
Optional Practicum		0-1
CPT 591	Workplace Practicum I	
<b>Quarter Credit Hours</b>		<b>8-9</b>
<b>Term IV</b>		
EMG 502	Emerging Technologies	4
MGM 534	Technology and the Law	4
Optional Practicum		0-1
CPT 592	Workplace Practicum II	
<b>Quarter Credit Hours</b>		<b>8-9</b>
<b>Term V</b>		
EMG 544	Decision Models	4
MGM 546	Ethical Decision Making	4

Optional Practicum		0-1
CPT 593	Workplace Practicum III	
<b>Quarter Credit Hours</b>		<b>8-9</b>
<b>Term VI</b>		
EMG 556	Master's Capstone	5
Optional Practicum		0-1
CPT 594	Workplace Practicum IV	
<b>Quarter Credit Hours</b>		<b>5-6</b>
<b>Total Quarter Credit Hours</b>		<b>45-49</b>

## Legend

C = Number of lecture hours per week

L = Number of laboratory hours per week

T = Total Quarter Credit Hours where each lecture hour per week is one credit, every 2-4 laboratory hours are one credit depending on the expected amount of pre- or post-lab work.

Subject to change.

## Program Mission, Goals, and Outcomes Program Mission and Goals

The master's degree in Engineering Management is designed for experienced professionals who have earned a bachelor's degree in engineering or related scientific areas and want to develop superior skills in managing engineering projects, products and services. The program bridges the gap between the field of engineering and the field of business management by equipping students with the technical expertise and leadership skills they need to advance their career in the fast-paced world of technology.

The coursework includes topics such as project management, corporate finance and business analysis, organizational behavior and ethics as well as systems engineering and decision models. The MSEM program will provide the engineer with the necessary business intelligence to improve overall processes while understanding the human elements and legal implications of any engineering discipline.

The program is comprised of 45 credit hours (11 courses) and builds upon the mathematical and analytical expertise gained from prior engineering education and/or professional experience.

## Program Outcomes

Students will:

1. Lead complex engineering and capital-intensive organizations with globally dispersed organizational structures.
2. Solve industry-related problems by applying their knowledge of business, mathematics, science and engineering.
3. Understand the implications of emerging technologies on the organization and society.
4. Interpret quantitative and subjective data to make sound engineering and managerial decisions.
5. Apply systems engineering to solve complex technical and operational problems to meet both business and customer needs.
6. Lead effective teams and develop quality projects.
7. Communicate effectively across the entire enterprise, both vertically and horizontally to all members of the organization.

8. Understand the ethical responsibilities of practicing engineering managers and the impact of their decisions within a global, societal and environmental context.
9. Appreciate the need for life-long learning and personal development.

## Q&A and Technical Standards Questions & Answers

### 1. When do my classes meet?

This evening program has two courses per term. Each course meets once a week from 6:30-10 p.m.

At the beginning of each term you will receive a detailed schedule giving the exact time and location of all your classes. The College requires that all students be prepared to take classes and receive services at any of NEIT's locations where the appropriate classes and services are offered.

Classes cancelled by the university for any reason will be rescheduled.

### 2. How large will my classes be?

The average size for a class is about 15 to 20 students; however, larger and smaller classes occur from time to time.

### 3. Where do my classes meet?

Classes meet on the East Greenwich campus. Some courses may be offered online.

### 4. How long should it take me to complete my program?

To complete your degree requirements in the shortest possible time, you should take the courses outlined in the prescribed curriculum. For a typical six-term curriculum a student may complete the requirements in as little as 18 months.

### 5. Is NEIT accredited?

NEIT is accredited by the New England Commission of Higher Education. Accreditation by NECHE is recognized by the federal government and entitles NEIT to participate in federal financial aid programs. Some academic departments have specialized professional accreditations in addition to accreditation by NECHE. For more information on accreditation, see NEIT's catalog.

### 6. Can I transfer the credits that I earn at NEIT to another college?

The transferability of a course is always up to the institution to which the student is transferring. Students interested in the transferability of their credits should contact the Office of Teaching and Learning for further information.

### 7. Can I transfer credits earned at another college to NEIT?

Transfer credit for appropriate courses taken at accredited institutions will be considered for courses in which the student has earned a "B" or above. An official transcript from the other institution must be received before the end of the first week of the term for transfer credit to be granted for courses to be taken during that term. Students will receive a tuition reduction for the approved courses based on the program rate and will be applied against the final academic term of the curriculum's tuition amount. No tuition credit is provided for technical courses which are not a part of the curriculum.

Students may transfer no more than 4 credits (one course).

### 8. How many credits do I need to acquire my Financial Aid?

Students entering the MSEM program will be eligible for various forms of financial aid, including loans, if they take at least 4 credits per term.

### 9. What does my program cost?

The cost of your program will be as outlined in your enrollment agreement, along with your cost for books and other course materials.

### 10. What kind of employment assistance does NEIT offer?

The Career Services Office assists NEIT students and graduates in all aspects of the job search, including resume writing, interviewing skills, and developing of a job search strategy. Upon completion of their program, graduates may submit a resume to the Career Services Office to be circulated to employers for employment opportunities in their fields. Employers regularly contact us about our graduates. In addition, our Career Services Office contacts employers to develop job leads. A strong relationship with employers exists as a result of our training students to meet the needs of industry for over fifty years. No school can, and NEIT does not, guarantee to its graduates employment or a specific starting salary.

### 11. Where will job opportunities exist?

Engineering Management is a career that brings together the technological problem-solving savvy of engineering and the organizational, administrative, and planning abilities of management in order to oversee complex enterprises from conception to completion. Engineering managers possess the practical experience as engineers that enables them to apply technical expertise to a project, but it's equally critical that they have the skills to organize and direct projects, as well as manage a variety of personnel, such as scientists, other engineers and support staff.

Engineering managers plan, coordinate, and supervise research, development, and production in a variety of engineering fields.

Engineering management job duties may include:

- overseeing the design of machinery, equipment, products or systems
- directing production, quality assurance or maintenance
- designing and assessing the feasibility of new products or processes
- coordinating with other units, such as management, financial or marketing

Engineering managers are in demand nationwide.

### 12. Do I need an engineering degree to enter the program?

Yes. A B.S. degree in engineering, engineering technology or a related field from an accredited institution is required for before beginning this degree program. You may enroll in this program pending the completion of your current BS degree. Significant professional experience may be considered in lieu of an appropriate degree. A transcript and/or a resume should be supplied to satisfy either of these requirements.

### 13. Do I need a certain grade point average to enter the program?

Yes, you will need a 2.5 grade point average to enter the program.

### 14. Are there any other special entrance requirements?

Yes. You will need to write a personal statement as part of your admission process that details your interest in the program and how it will enable you to accomplish your professional goals.

### 15. Do I need to maintain a certain grade point average?

Yes. You are required to maintain a cumulative grade point average of at least 3.0 throughout the program. The minimum passing grade for a course in the MSEM program is a C (73%).

#### 16. What happens if I earn less than a C in a course?

Students who earn less than a C in any course will be required to re-take the course the next time it is offered. If the student does not earn a C or better in a course after the second attempt, he/she will be dismissed from the MSEM program. Students will only be allowed to re-take two courses.

#### 17. What are the hardware and software requirements for the program?

Type	Recommended Minimum
Operating System	Windows 10 or Macintosh OS X (10.14)
Processor	2+ GHz
Memory	4GB
Plug-ins	Adobe PDF Reader, Flash Adobe PDF Reader, Flash and others as required by specific courses
Players	QuickTime, Java Player, Java
Browser	Chrome, IE, Safari, Edge, Firefox (all latest versions)
Display	1024x768
Software	Office 365 (2016)
Internet Connection	FiOS/DSL/CABLE DSL/CABLE
Email Account	New England Tech student email account
Sound Card	Required
Other (some programs)	• A webcam (the one built into your laptop or iPad should be fine) • A microphone (built into the computer or headset is handy). • A digital camera (the one on a smart phone is fine).

Online students must be capable of installing and maintaining their own computer's hardware and software. New England Tech does not assist students with the setup of their computers.

Information about obtaining the software (if any) will be made available to you at the start of each course.

Note: Tablets and smartphones can be convenient for reading course materials and email but will not be sufficient for doing all of your course work.

## Technical Standards

These technical standards set forth by the engineering department establish the essential qualifications considered necessary for students admitted to the program. The successful student must possess the following skills and abilities or be able to demonstrate they can complete the requirements of the program with or without reasonable accommodation, using some other combination of skills and abilities.

### Cognitive Ability

- Good reasoning and critical thinking skills.
- Problem solving skills and techniques.
- Ability to learn, remember and recall detailed information and to use it for problem solving.
- Ability to deal with materials and problems such as organizing or reorganizing information.

- Ability to use abstractions in specific concrete situations.
- Ability to separate complex information into its component parts.
- Ability to perform tasks by observing demonstrations.
- Ability to perform tasks by following written instructions.
- Ability to perform tasks following verbal instructions.
- Possession of basic keyboarding skills and knowledge of computer programs.

### Communications Skills

- Ability to speak in understandable English in a classroom situation on a one-on-one basis as well as before a group.
- Ability to communicate effectively with faculty and other students.
- Ability to demonstrate and use the knowledge acquired during the classroom training process.
- Ability to verbally express technical concepts clearly and distinctly.
- Ability to express thoughts clearly.

### Adaptive Ability

- Ability to remain calm in the face of computer lab equipment and/or software failure.
- Ability to maintain emotional stability and the maturity necessary to interact with members of the faculty and students in a responsible manner.
- Ability to tolerate the differences in all students, faculty, and administration.
- Ability to follow instructions and complete tasks under stressful and demanding conditions.
- Ability to adapt in a positive manner to new and changing situations with an open mind and flexibility.
- Ability to think clearly and act quickly and appropriately in stressful situations.

### Physical Ability

- Ability to sit continuously at a personal computer for long periods of time in order to learn and complete projects and/or assignments.
- Ability to perform learned skills independently, with accuracy and completeness within reasonable time frames in accordance with classroom and business procedures.

### Manual Ability

- Sufficient motor function and sensory abilities to participate effectively in the classroom laboratory.
- Sufficient manual dexterity and motor coordination to coordinate hands, eyes and fingers in the operation of computers, business equipment and other required classroom or laboratory tools and equipment.

### Sensory Ability

#### Visual

- Acute enough to see clearly and interpret the contents on a computer screen or other classroom tools.

## **Degree Progress Checklist**

### **Engineering Management - MS**

#### **Degree Progress Checklists**

- For students entering July 2019 or later