

# MS IN ENGINEERING MANAGEMENT

**Home Department:** School of Management

**Program Academic Advisor/Contact:**

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## Program Overview

The Master of Science Engineering Management program combines individuals' professional engineering knowledge with education in the topics necessary to effectively manage in the contemporary technology driven business environment. Enrollment is limited to graduates of ABET accredited engineering programs or Kettering University graduates with majors in an engineering discipline. Six certificate options are embedded in the Engineering Management degree program.

On campus MSEM students may select a management internship course (MGMT-693) as part of the core program and may start the program in any term.

### MSEM PROGRAM GOALS

Students should:

1. demonstrate the personal, interpersonal, teamwork, and ethical skills required to lead and manage engineering functions in organizations effectively and ethically. (Personal Effectiveness)
2. be able to identify, evaluate, and choose among alternative solutions to global organizational problems. (Cognitive Reasoning)
3. be able to evaluate the effects of technology on engineering management issues. (Technological Mindset)
4. be able to explain the importance of an entrepreneurial mindset in managing organizational talent, resources, and innovation in a complex global economy. (Value Creation in a Global Economy)
5. demonstrate knowledge, skills, and abilities in core disciplines, focusing on identifying, solving, and managing complex engineering issues to create value. (Core Domain Knowledge)

## Prerequisites

A foundational level of knowledge in critical areas is required prior to beginning the Master of Science in Engineering Management (MSEM) program. This foundation helps to ensure that students are prepared to fully engage and succeed in the coursework associated with graduate programs in management. Students must have an undergraduate course in each of the following areas, or complete MGMT-510 Foundations of Business, or test out of individual prerequisite courses through self-directed study.

Areas of prerequisite knowledge:

Code	Title	Credit Hours
	Economics	
	Managerial Accounting	
	Statistics	

Management

Marketing

## Program Curriculum Requirements

The curriculum for the Engineering Management program involves 10 courses totaling 40 credit hours including:

- Seven core courses for 28 credits, plus
- Three certificate courses for 12 credits.

### Required Core Courses

Code	Title	Credit Hours
<b>Required Core Courses</b> <sup>1,2,3</sup>		
BUSN-659	International Business	4
FINC-619	Financial Management	4
IME-564	Ethics and Practice of Engineering	4
ISYS-669	Enterprise Information System Models	4
MGMT-639	Managing People & Organization	4
MGMT-659	Strategy (Capstone)	4
	or MGMT-693 Internship in Management	
MRKT-679	Marketing Management	4
<b>Total Credit Hours</b>		<b>28</b>

### Certificates

Code	Title	Credit Hours
<b>Global Leadership Certificate (Available Online Only)</b> <sup>4</sup>		
BUSN-689	Organizational Behavior	4
MGMT-649	Ethics and Leadership	4
MGMT-679	Leadership	4
<i>Credit Hours Subtotal:</i>		<i>12</i>
<b>Operations Management Certificate</b>		
MGMT-661	Operations Management	4
	or IME-676 Lean Six Sigma	
MGMT-609	Technology Management	4
MGMT-619	Project Management	4
<i>Credit Hours Subtotal:</i>		<i>12</i>
<b>Supply Chain &amp; ERP Certificate (Available On-Campus Only)</b>		
Select any three courses from the followings		
IME-652	Production System Design	4
IME-654	Enterprise Resource Planning	4
MGMT-669	Supply Chain Management	4
	or IME-653 Supply Chain Design	
<i>Credit Hours Subtotal:</i>		<i>12</i>
<b>Technology Leadership Certificate (Available On-Campus Only)</b>		
Students select three 600 level courses from CE, CS, ECE, EE, IME, or MECH.		12
<i>Credit Hours Subtotal:</i>		<i>12</i>
<b>Lean Principles for Healthcare Certificate (Available Online Only)</b>		
IME-656	Engineering for Healthcare Systems	4
IME-676	Lean Six Sigma	4

or MGMT-669	Supply Chain Management	
HMGT-609	Healthcare Management	4
<i>Credit Hours Subtotal:</i>		12
<b>Data Analytics Certificate</b>		
CS-601	Programming Methods for Data Science	4
MGMT-623	Data Analytics	4
MGMT-624	Data Visualization	4
or MGMT-625	Digital Strategy and Competitive Advantage	
<i>Credit Hours Subtotal:</i>		12

- <sup>1</sup> Study Abroad credits cannot be applied to this core courses set.
- <sup>2</sup> Students admitted to the BS-Masters program can count up to three (3) 400\*/500-level courses taken as an undergraduate. \*400 level courses must be part of an approved 400/600 course offering.
- <sup>3</sup> MGMT-693 is only available to on campus students.
- <sup>4</sup> Students affiliated with the SACM program are not allowed to enroll in this certificate.

The degree also has a study-abroad option that allows students to experience international culture and receive up to 16 credits of graduate course work.