ENGINEERING MANAGEMENT

The program may be completed entirely on campus, entirely online, or through a combination of on-campus and online courses.

Admission

Undergraduate Degree Requirement

Admission to the program requires a BS degree in engineering, ***OR*** a degree in math, computer science, or a physical science earned from an accredited program with an average of *B* or better coupled with extensive experience in engineering.

Students who do not meet BS degree requirements of the program should speak to the program advisor regarding the additional requirements to be met.

Course Prerequisite

- Course in probability and statistics (IMSE 510, Probability and Statistical Models or equivalent)

The IMSE 510 requirements can be completed after admission into the program and will count as an elective toward the 35-credit degree requirement.

Advanced Standing

Up to six graduate credit hours (grade of *B* or better) may be transferred from another accredited institution.

Students may transfer up to one-half (1/2) the minimum number of credit hours required for their master's or professional degree from another University of Michigan program.

Graduate Academic Policies can be found below:

http://catalog.umd.umich.edu/academic-policies-graduate/

Degree Requirements

The Master of Science in Engineering Management requires a minimum of 35 graduate credit hours.

Minimum Grade Requirement in addition to maintaining a minimum cumulative GPA of 3.0 or higher every semester.

- Courses in which grades of C- or below are earned cannot be used to fulfill degree requirements.
- A minimum of a 3.0 cumulative GPA or higher is required at the time of graduation.

Degree Requirements

The program of study must satisfy the following distribution and course requirements:

1. Engineering Management core courses, 18 credit hours

Code	Title	Credit Hours
EMGT 500	Management for Engineers	3
EMGT 505	Systems Engineering	3
EMGT 520	Prod & Oper Engineering I	3
EMGT 525	Tot Qua Mgmt and Six Sigma	3
EMGT 570	Enterprise Information Systems	3
EMGT 580	Mgt of Prod and Proc Design	3

2. Business requirements, 12 credit hours

Code	Title	Credit Hours
ACC 505	Devel & Interp Financial Info	3
Choose 3 courses from the list below:		
BE 530	Econ Analysis: Firm & Consumer	3
FIN 531	Fin Fundament & Value Creation	3
HRM 561	Human Resource Management	3
MKT 515	Marketing Management	3
OB 510	Organization Behavior	3

3. Capstone Project, 2 credit hours

Code	Title	Credit Hours
EMGT 591	Capstone Project in EMGT	2

4. Electives, 3 credit hours

Code	Title	Credit Hours
Approved Electives, take one class from the list below:		
IMSE 501	Human Factors & Ergonomics	3
IMSE 505	Optimization	3
IMSE 510	Probability & Statistical Mod	3
IMSE 511	Design and Analysis of Exp	3
IMSE 514	Multivariate Statistics	3
IMSE 515	Fundamentals of Program Mgt	3
IMSE 516	Project Management and Control	3
IMSE 517	Managing Global Programs	3
IMSE 519	Quan Meth in Quality Engin	3
IMSE 5205	Eng Risk-Benefit Analysis	3
IMSE 5215	Program Budget, Cost Est & Con	3
IMSE 538	Intelligent Manufacturing	3
IMSE 545	Vehicle Ergonomics I	3
IMSE 546	Safety Engineering	3
IMSE 577	Human-Computer Interaction	3
IMSE 5655	Supply Chain Management	3
IMSE 567	Reliability Analysis	3
IMSE 581	Prod & Oper Engineering II	3
IMSE 588	Bldg High Perf Learning Org	3
IMSE 586	Big Data Aanal & Visuliztn	3
IMSE 593	Vehicle Package Engineering	3
IMSE 606	Advanced Stochastic Processes	3
Additional electives from units in UM-Dearborn could also be considered with advisors approval.		

5. Work Experience requirement—minimum of two years in an engineering job function for students with an undergraduate degree in a field other than engineering.
6. Thesis or Research Essay—students, with the approval of their graduate advisor, may elect a master's thesis for no more than five credit hours.

Learning Goals

1. Provide an understanding of core management areas vital for a technical manager, e.g., marketing, accounting, organizational behavior, business ethics/law, finance.
2. Provide knowledge of topics inherent and common to all engineering disciplines, e.g., systems engineering, total quality management, production management, management of product/process design.
3. Provide the requisite knowledge and skills to manage the engineering function at both lower and upper levels of management.
4. Provide experience in integrating technical and management aspects in “real life” engineering project or problem.