

MS in Engineering Management

The Master of Science in Engineering Management program has been designed with significant industry input to provide a broad technical management educational experience for engineers and other scientific professionals. The program is especially suited for engineers moving into their first management position or, with proper advising and course selection, can help those who already have some management experience.

Several course options are available, but all require some technical tools—probability and statistics, operations research, accounting and/or finance, project management, and others. Students can take their electives in a management or technical area to best fit their personal goals and objectives. A final three-hour capstone project requires students to integrate and synthesize their experiences.

The program requires a minimum of 33 semester credits consisting of core courses, elective courses, and a capstone project. Students enrolled through NTU could fulfill the degree requirements in two-and-a-half years by registering for at least four courses per year and completing the capstone project as an additional course in the final year. Students should complete the degree within five years by taking two to three courses per year.

Admissions Requirements

Students must meet the following eligibility requirements for regular admission into the Engineering Management program:

- BS degree in engineering from an ABET-accredited engineering program in the United States or a CEAB-accredited program in Canada; or the equivalent from a foreign institution.
- Cumulative undergraduate G.P.A. of at least 2.9 on a 4.0 scale.
- At least two years of engineering work experience.

Students who do not meet these requirements may be granted provisional admission into the program, depending on academic background and experience. For additional information about provisional admission status see the Admission section of this bulletin.

Curriculum Overview

A total of 33 credit hours is required for graduation. Students will complete seven core courses (21 credits), three electives from any of NTU's graduate-level courses (9 credits), and an engineering management capstone course (3 credits).

Core Curriculum (21 credits)

Required Core Courses (12 credits)

The core curriculum begins with four required courses in the following topic areas, as outlined below under the Program of Study Plan:

- Introduction to Engineering Management
- Operations Research
- Organizational Behavior
- Probability and Statistics for Engineers

Students should complete the required core courses prior to pursuing the remaining core and elective courses.

Additional Core Courses (9 credits)

Students complete the core curriculum by selecting three additional courses in the following areas:

- Economic Decision Analysis
- Finance and Accounting
- Marketing
- Project Management
- Technology and Operations Management

Electives (9 credits)

Students may select three additional courses from the NTU graduate catalog to meet the elective requirement and bring their total credits to a minimum of 33. Elective credits are designed to give each student an opportunity to tailor their program to their individual and organizational goals and needs. Students must consult with an NTU advisor to confirm they have the appropriate prerequisite knowledge and to ensure that the electives are appropriate to their Program of Study Plan.

Capstone Project (3 credits)

In the last semester of the program, or after all other core courses and electives have been met, students are to enroll in the three-credit capstone course, which involves conducting a project and writing a report relevant to the practice of engineering management. This assignment is to be negotiated with and carried out under the direction of a qualified faculty person. The project might involve the role of government, entrepreneurship, and/or professional ethics; sponsors of enrolled students may be able to suggest projects of importance. See the NTU Web site for more details.

Program of Study Plan

Admitted students should submit a Program of Study Plan (PSP) to NTU prior to completion of six semester credit hours. Failure to submit a PSP increases the possibility of students completing duplicate courses or courses that are not applicable to their degree programs. Although NTU cannot guarantee preferred course availability in any given term, the PSP documents do guide course selection from partner universities. It may be necessary for a student to revise an approved PSP when course availability does not comply with the student's needs. The PSP form should be submitted through the NTU Web site.

Individual course descriptions may be found on the NTU Web site at www.ntu.edu. *Specific courses and course requirements may change. Updates will be posted on the NTU Web site.*

Core Courses (21 credits)

Required Core Courses (12 credits)

MB 710	Engineering Management
MA 520	Probability and Statistics for Engineers
QM 710	Operations Research
NB 720	Organizational Behavior—Working Within the Equations of State

Additional Core Courses (9 credits)

One course from the following:

NB 750	Accounting and Finance—Measurement and Flow Control for the Economic Engine
EF 735	Economic Decision Analysis

One course from the following:

TO 735	Marketing of Advanced Technologies
NB 730	Marketing—Maximizing the Organizational I/O Bus

One course from the following:

TO 760	Project Management Systems
TO 761	Advanced Topics in Project Management
TO 580	Production and Operations Management
NB 710	Technology and Operations—Moore's Law and Other Business Accelerators

Elective Courses (9 credits)

Students will select three elective courses from any of NTU's graduate-level courses, provided the student has the appropriate prerequisite knowledge and approval of an NTU advisor.

Suggested electives include the following:

NB 721	Leadership and Teamwork—Momentum Transfer Using Power, Influence, and Collaboration
--------	---

SP 560	Manufacturing Management Practices
MG 723	Supply Chain Management

Capstone Course (3 credits)

MB 780	Engineering Management Capstone Project
--------	---