

Engineering Management (EM)

Curriculum Outline

The Engineering Management Program is designed for qualified individuals who plan to assume a management role in a technology-based, project-oriented environment within a manufacturing, service, or government organization. It offers an interdisciplinary course of study that combines the unique capabilities of industrial engineering, management, and information technology. As a result, the program focuses on technological leadership through the integration of people and technology.

Students are prepared for leadership roles in technologically oriented businesses through courses that present both the theoretical, and the practical aspects of managing complex engineering projects. The curriculum enables students to understand and manage the complex interactions among people, technology, finance, and the socio-political environment in which organizations operate. Upon completion of the program, graduates are equipped with broad-based knowledge, and quantitative and qualitative analytical skill to succeed as managers, from project conceptualization through implementation.

In order to gain practical experiences, fourth-year students are allowed to choose among three tracks of special studies. For more details on the academic options and special studies, please contact the EM Program Coordinator..

Structure and Components

1. General Basic Courses	30 Credits
1.1 Part I	21 Credits
1.1.1 Social Sciences	6 Credits
1.1.2 Humanities	3 Credits
1.1.3 Science and Mathematics	3 Credits
1.1.4 Languages	9 Credits
1.2 Part II	9 Credits
2. Core Courses	114 Credits
2.1 Compulsory Courses	108 Credits
2.2 Special Study	6 Credits
3. Free Elective Courses	6 Credits
Total	150 Credits

Details of the Curriculum

1. General Basic Courses	30 Credits
1.1 Part I	21 Credits
1.1.1 Social Sciences (2 courses) TU100 TU101	6 Credits
1.1.2 Humanities (1 course) TU102	3 Credits
1.1.3 Science and Mathematics (1 course) TU103	3 Credits
1.1.4 Languages (3 courses) TU104 TU105 TU106	9 Credits
1.2 Part II	9 Credits
GTS133 GTS202 ITS100	
2. Core Courses	114 Credits
2.1 Compulsory Courses	108 Credits
2.1.1 Science and Mathematics (6 courses) GTS111 GTS112 GTS121 GTS122 GTS212 GTS213	18 Credits
2.1.2 Fundamental of Engineering and Technology (7 courses) GTS303 MTS214 MTS252 MTS254 MTS256 MTS257 MTS258	20 Credits
2.1.3 Information Technology (4 courses) MTS280 MTS381 MTS382 MTS487	12 Credits
2.1.4 General Management (6 courses) MTS213 MTS312 MTS313 MTS314 MTS315 MTS412	18 Credits
2.1.5 Engineering Management (14 courses) MTS231 MTS232 MTS233 MTS235 MTS331 MTS332 MTS333 MTS351 MTS352 MTS394 MTS403 MTS431 MTS451 MTS481	40 Credits
2.2 Special Study	6 Credits
1) Senior Project Track (2 courses) MTS309 MTS404	
2) Foreign Exchange Track (3 courses) MTS309 MTS493 MTS496	
3) Extended Training Track (1 course) MTS304	

3. Free Elective Courses	6 Credits
Students may choose any free elective courses (not less than 6 credits in total) offered by SIIT or TU, including general basic courses, except:	
1. General basic courses in Science and Mathematics.	
2. General basic TU courses.	
3. Courses with contents similar to those of other courses in the curriculum already taken by the students.	

Total Credit Requirement 150 Credits

EM Curriculum : 150 Credits

First Year

Semester I

GTS121	General Science I	3(3-0-6)
GTS122	General Science II	3(3-0-6)
GTS133	Environmental Studies	3(3-0-6)
ITS100	Introduction to Computers and Programming	3(2-3-4)
TU102	Social Life Skills	3(3-0-6)
TU104	Critical Thinking, Reading, and Writing	3(3-0-6)
TU106	Creativity and Communication	3(3-0-6)
Sub-Total		21(20-3-40)

Semester II

GTS111	Probability for Technologists	3(3-0-6)
GTS112	Principles of Linear Algebra	3(3-0-6)
MTS280	Introduction of Algorithms and Object Oriented Programming	3(2-2-5)
TU100	Civic Engagement	3(3-0-6)
TU101	Thailand ASEAN and the World	3(3-0-6)
TU103	Life and Sustainability	3(3-0-6)
TU105	Communication Skills in English	3(3-0-6)
Sub-Total		21(20-2-41)

Second Year

Semester I

GTS202	English Language Structures	3(3-0-6)
GTS212	Calculus for Technologists I	3(3-0-6)
MTS213	Principles of Business and Management	3(3-0-6)
MTS231	Statistical Methods for Managers	3(3-0-6)
MTS252	Materials Science	3(3-0-6)
MTS258	Economics for Technologists	3(3-0-6)
MTS315	Fundamentals of Financial and Managerial Accounting	3(3-0-6)
Sub-Total		21(21-0-42)

Semester II

GTS213	Calculus for Technologists II	3(3-0-6)
GTS303	Communications in Business	2(2-1-3)
MTS214	Business Law	3(3-0-6)
MTS254	Introduction to Management Science	3(3-0-6)
MTS256	Fundamental of Thermofluids	3(3-0-6)
MTS312	Principles of Marketing	3(3-0-6)
MTS382	Database Systems and Applications	3(3-0-6)
Sub-Total		20(20-1-39)

Third Year

Semester I

MTS235	Statistics for Data Science and Empirical Study	3(2-2-5)
MTS313	Organizational Behavior	3(3-0-6)
MTS351	Management Systems Optimization	3(3-0-6)
MTS352	Ergonomics and Work Design	3(3-0-6)
MTS381	Business Information Systems	3(3-0-6)
MTS412	Business Finance	3(3-0-6)
Sub-Total		18(17-2-35)

Semester II

MTS232	Production and Operations Management	3(3-0-6)
MTS257	Fundamentals of Electrical and Electronics Engineering	3(3-0-6)
MTS314	International Trade and Business	3(3-0-6)
MTS331	Economic Decision Analysis	3(3-0-6)
MTS394	Introduction to Research Methodology in Management Technology	3(3-0-6)
MTS481	Business Process Simulation	3(3-0-6)
MTS487	Business Intelligence and Analytics	3(3-0-6)
Sub-Total		21(21-0-42)

Summer

Select Senior Project Track, Foreign Exchange Track, or Extended Training Track.

1. Senior Project Track and Foreign Exchange Track

MTS309	Engineering Management Training	1(0-40-0)
Sub-Total		1(0-40-0)

2. Extended Training Track

XXXxxx	Free Elective	3(x-x-x)
Sub-Total		3(x-x-x)

Fourth Year

Semester I

MTS233	Introduction to Supply Chain Management	3(3-0-6)
MTS332	Quality Management	3(3-0-6)
MTS333	Production and Inventory Management	3(3-0-6)
MTS403	Management Technology Seminar	1(0-3-0)
MTS431	Facility Location and Layout Planning	3(3-0-6)
MTS451	Project Management	3(3-0-6)
XXXxxx	Free Elective	3(x-x-x)
Sub-Total		19(x-x-x)

Semester II

1) Senior Project Track

MTS404	Management Technology Project	5(0-15-0)
XXXxxx	Free Elective	3(x-x-x)
Sub-Total		8(x-x-x)

2) Foreign Exchange Track

MTS493	Special Study in Engineering Management I	3(3-0-6)
MTS496	Special Study in Engineering Management III	2(2-0-4)
XXXxxx	Free Elective	3(x-x-x)
Sub-Total		8(x-x-x)

3) Extended Training Track

MTS304	Extended Engineering Management Training	6(0-40-0)
Sub-Total		6(0-40-0)