Engineering Management M.S.

Contact Information

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School of Mines Faculty

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Engineering Management

The M.S. degree in Engineering Management (MSEM) is designed to provide a program of advanced study in technically oriented disciplines for candidates anticipating a managerial career. It is a multi-disciplinary applications-oriented degree, which draws from the fields of engineering, management, business, operations research and management science.

The intent of the program is to provide an interface between training received in engineering and scientific disciplines with the management of resources and personnel in a technical environment. In addition to being available in distance mode, flexibility is built into the program in order to provide an optimum educational experience to students. Graduates of the EM program are likely to find an initial position as a mid level supervisor within a broad range of applications requiring the use of quantitative models to integrate human and material resources necessary to perform an integrated function. Program specific information and resources may be found at the department of industrial engineering website website: http://ie.sdsmt.edu.

Application should be made through the graduate office at School of Mines. Alternatively, students may apply for the program online by visiting School of Mines website at: http://ie.sdsmt.edu/tmweb/tm.htm. All candidates for this degree must possess a bachelor's degree from a four-year accredited institution, in which satisfactory performance has been demonstrated. In addition to these requirements, the following minimum bachelor's level credits shall have been completed:

1. Mathematics one year minimum, to include algebra and basic calculus (Equivalent to School of Mines MATH 123).

2. Six semester hours of natural and physical science (fields of geology, astronomy, biology, meteorology, chemistry, and physics) and which must include at least 3 credit hours of chemistry or physics.

3. Three semester hours of probability and statistics. (Students may complete prerequisite requirements in probability and statistics through an Internet-based study option. Students desiring this option should contact the program coordinator.)

In addition, individual elective courses may have additional prerequisite requirements. A maximum of 12 semester hours of credit may be transferred into the candidate's program from another institution. This must be from a regionally accredited institution. Application materials will be evaluated by an admission committee composed of the program director and such other faculty as deemed appropriate for the review. Recommendations from this committee will be made to the Dean of Graduate Education and research at the School of Mines.

Requirements for the degree include the completion of a minimum of 24 credits of course work and 6 credits of research for the thesis option, or 32 credits of course work for the non-thesis option. A cumulative GPA of 3.0 must be obtained by the end of the program of study and other general and master's level grade requirements must be maintained as specified in this catalog. The probation policy outlined in this catalog applies to all credits taken.

The continuing registration requirement must be satisfied at the School of Mines campus. Students utilizing transfer credits should plan accordingly and ensure that they are officially enrolled in a minimum of the two credits from the School of Mines the semester in which they graduate.

In the early stages of the candidate's program, a student advisor will be appointed by the program director of School of Mines. The advisor will meet with the student to prepare a program along the direction of the specific emphasis desired. The advisor and student will then organize a advisory committee, and file their committee program of study with the School of Mines graduate office according to the directions specified under "Supervision of the Master's Program" of the Master of Science Programs section of this catalog.

Core Course Requirements

A minimum of 3 semester hours of required course work must be completed in each of four discipline areas. Discipline areas and allowable courses are shown below.

Business/Finance

ENGM 661	Engineering Economics for Managers
ENGM 640	Business Strategy

Management

ENGM 742	Engineering Management and Labor Relations
IENG 566	Project Planning and Control

Quantitative Methods

ENGM 631	Optimization Techniques
ENGM 732	Stochastic Models in Operations Research
ENGM 745	Forecasting for Business and Technology

Operations Management

ENGM 663	Operations Planning
ENGM 620	Quality Management

Students wishing to utilize transfer courses to satisfy core requirements should contact their advisor or the program coordinator for suitability of transfer credits. In some cases, agreements with other state institutions are already available.

Recommended Elective Courses

Any core course not used to satisfy core requirements may be used as an elective. Students may use any graduate School of Mines course provided it is approved by their committee. ENGM courses are available in distance learning mode and are listed below.

School of Mines Courses

ENGM 625	Innovation and Commercialization	3
ENGM 640	Business Strategies	3
ENGM 650	Safety Management	3
ENGM 655	Ergonomics for Managers	3
ENGM 675	Ethics and Professionalism for Technology Managers	3
ENGM 720	Statistical Process Control	3
ENGM 732	Stochastic Models in Operations Research	3

ENGM 745	Forecasting for Business and Technology	3
ENGM 792	Advanced Topics in Technology Management	3

Approved USD Elective and Core Courses

BADM 611	Investments	3
BADM 701	Readings and Business Problems	3
BADM 720	Quantitative Methods	3
BADM 722	Advanced Information Systems	3
BADM 726	Decision Support Systems	3
BADM 727	Database Management Administration	3
BADM 728	Microcomputers and Small Business Management Systems	3
BADM 761	Organizational Theory and Behavior	3
BADM 762	Business and its Environment	3
BADM 770	Marketing Administration	3
BADM 780	Administrative Policy	3
BADM 781	Managerial Accounting	3
BADM 794	Research Problems	3

The following are sample programs for the project option for a student with a mining engineering degree (Student A), and a non-thesis option for a student contemplating a career as a laboratory manager in a government laboratory (Student B).

Student A

ENGM 661	Engineering Economics for Managers	3
ENGM 742	Engineering Management and Labor Relations	3
IENG 566	Project Planning and Control	3
ENGM 663	Operations Planning	3
ENGM 631	Optimization Techniques	3
ECON 782	Managerial Economics	3
ENGM 620	Quality Management	3
ENGM 732	Stochastic Models in Operations Research	3
ENGM 650	Safety Management	3
ENGM 745	Forecasting for Business and Technology	3
ENGM 788	Master Research Problems/ Project	2
Total		**32**

Student B

ENGM 661	Engineering Economics for Managers	4
ENGM 742	Engineering Management and Labor Relations	3
IENG 566	Project Planning and Control	3
ENGM 663	Operations Planning	3
ENGM 631	Optimization Techniques	3
ECON 782	Managerial Economics	3
ENGM 732	Stochastic Models in Operations Research	3
ENGM 720	Statistical Process Control	3
ME 685	Statistical Approaches to Reliability	4
MATH 687	Statistical Design and Analysis of Experiments	3
Total		**3**