Program Overview

The Master of Science (M.S.) degree in Engineering Management at Robert Morris College prepares students with a background in engineering, computer science, mathematics, and sciences for advancement in technical and managerial fields.

The engineering management discipline is defined as designing, operating, and continuously improving purposeful systems of people, equipment, money, time, information, and energy. It integrates engineering, management, and technical knowledge, techniques, and skills to educate leaders who can achieve desired goals in a technological enterprise while emphasizing quality, ethics, and concern for the environment.

Students in this innovative program will be prepared to apply knowledge and provide leadership in technical and engineering environments. Demonstrating an advanced level of intellectual achievement in the context of engineering projects and synthesizing theory and practice in design and development of engineering systems will be the natural effect of this advanced learning program.

Entrance Requirements

Students entering this program must have successfully completed a B.S. degree in engineering, computer science, mathematics, and sciences with a grade point average of 2.8 or higher on a 4.0 scale during the final 60 credit hours of that program of study.

To apply for the program, students should submit the following credentials to the Graduate Enrollment Office:

1. A completed application and a non-refundable $35 application fee. You may also apply online for free at www.robert-morris.edu.
2. Official transcripts from all colleges and universities attended.
3. Two current letters of recommendation.

All application materials must be received before an admission decision can be made.

Degree Requirements

The M.S. in Engineering Management program is offered in both thesis and non-thesis formats. The selection of a format will be determined by the interest of the student.

THESIS OPTION

REQUIRED COURSES - 9 credits

Course No. Course Title
ENGR5010 Engineering Cost Estimation & Financial Analysis
ENGR5020 Engineering Systems Analysis & Design
ENGR5030 Project Engineering & Management

DIRECTED ELECTIVES - 15 credits

Non-Engineering Course Work:
Students must complete six to nine credit hours of non-engineering course work. Students can choose from the graduate course offerings in the School of Business and Management, including courses in Accounting, Information Systems Design, Local Area Network Design, Corporate Finance, Marketing, and Entrepreneurship.

Engineering Course Work:
Students must complete six to nine credit hours of engineering course work.

THESIS - 6 credits

The thesis requires a minimum of six credit hours of applied research in an appropriate area of interest to the student. A faculty advisor will work with the student to define the thesis topic. A defense of the thesis before a faculty committee is required of all students enrolled in the thesis format.

Laboratory Facilities

Robert Morris Colleges School of Engineering, Mathematics and Science offers modern engineering laboratories at the Moon Township Campus. These laboratories are housed in our Computer Integrated Enterprise Learning Facility located in John Jay Center. Included are manufacturing automation, metrology, rapid prototyping, materials testing and chemistry laboratories, as well as a fully equipped and networked computer learning center.

This fully equipped facility can support the applied research interests of students who choose to pursue the thesis version of the M.S. degree in Engineering Management.

Tuition and Fees (2001-2002)

Tuition and fees for this program are $450 per credit.

Program Location

Offered primarily at the Moon Township Campus.

For More Information

Contact our Graduate Enrollment Office at 412-262-8304 or visit our Website at www.robert-morris.edu where you can apply for free.
ENGR 5020 Engineering Systems Analysis & Design
Credits: 3 lecture
This course deals with the design and implementation of engineered systems. The selection and evaluation of system performance parameters such as utilization, efficiency, unit cost, and output capacity is discussed. System automation and integration methods and techniques are explored.

ENGR 5030 Project Engineering & Management
Credits: 3 lecture
This course deals with managing engineering and technical projects, specifically the design, evaluation, selection, control, organization, and management of technical projects. Major topics include scheduling, budgeting, planning, and monitoring practices. Additional topics include proposal preparation, information systems, human resources, and strategic issues. Prerequisite: ENGR 5020.

ENGR 5040 System Simulation
Credits: 2 lecture/1 lab
This course is an in-depth treatment of stochastic system modeling and computer based simulation methods. The fundamental statistical distributions governing system performance and behavior are introduced, data requirements and collection for system modeling are discussed, and the construction, verification, and validation of computer based simulation models are explored. Prerequisite: ENGR 5020.

ENGR 5050 Tolerancing Methods
Credits: 3 lecture
This course deals with dimensional tolerancing methods, both traditional (design for 100 percent compliance) and statistical tolerancing. Geometric dimensioning and tolerancing methods are introduced, and the relationship between dimensional tolerances and cost of production is explored.

ENGR 6010 Information & Inventory Control
Credits: 3 lecture
This course deals with the relationship between cost, production capacity, system performance, work in process inventory levels, and finished goods inventory levels are explored. Topics covered also include inventory systems, scheduling, and typical industrial constraints. Both deterministic and stochastic inventory control models are introduced, and inventory control strategies are explored. Prerequisite: ENGR 5020.

ENGR 6020 Computer Integrated Manufacturing
Credits: 2 lecture/1 lab
This course deals with the integration methods used in modern engineering enterprises to link the design engineering, production, quality, data collection, accounting, and production engineering functions. Automated device control, automated data acquisition, distributed system control, networking, and data analysis methods are covered. Hardware and software requirements for system integration are explored. Prerequisite: ENGR 5020.

Directed Electives
To broaden their educational experience, all students enrolled in the M.S. in Engineering Management are required to choose from graduate courses offered through the Colleges of Business and the School of Communications and Information Systems. Some of the elective courses recommended by the graduate faculty include:
- Strategic Management
- Managerial Accounting
- Information Systems Design
- Local Area Network Design
- Corporate Finance
- Marketing
- Entrepreneurship

For a complete list of graduate courses and course descriptions, log on to www.robert-morris.edu.