Master’s Degree in Engineering Management

Engineering management at Old Dominion University provides graduates with the necessary skills, knowledge, abilities and attitudes required to perform technical and managerial functions in technology-based, project-driven enterprises. Founded in the solid principles of systems science and systems engineering while exploiting the technical analysis tools of management science, the curriculum is designed to produce graduates capable of addressing issues related to the design, operation, analysis and transformation of complex problems. Particular emphasis is placed not only on the technical methods and tools necessary for success in technology-based enterprises, but also on the critical thinking skills essential to effectively communicate and manage completion of complex projects.

Master’s Degrees in Engineering Management

Practicing engineers and applied scientists often find themselves with opportunities for managerial responsibility three to five years after completing their undergraduate education. Approximately 85 percent of all engineers serve in a managerial capacity at some point in their careers. The engineering management master’s degree programs bridge the gap between the current management education programs and the needs of engineering and science professionals.

Unlike traditional MBA programs, a master’s degree in engineering management builds upon the technical backgrounds of engineers and scientists and emphasizes project management skills specifically required in technology-based, project-driven enterprises, such as leadership, planning, scheduling, logistics, cost estimating, systems analysis and quality. The overall objective of the engineering management master’s degree programs is to prepare individuals to lead, organize, implement, manage and successfully complete technical projects.

Engineering Management at Old Dominion

The Department of Engineering Management and Systems Engineering at Old Dominion University offers two graduate programs leading to a master of engineering management (MEM) degree or a master of science in engineering management (MS). The MS program is designed for full-time students who wish to include a research-oriented thesis to their program. The MEM degree requires 10 credit hours of coursework and a one-credit hour capstone course. The MS degree requires 27 credit hours of coursework and six credit hours of thesis research.

The engineering management program is certified by the American Society of Engineering Management (ASEM) and is the first program in the nation to be recertified by ASEM. The program won the 2007 ASEM Founders Award for Excellence in Academic Leadership after previously winning this award in 2000, 2002 and 2003.

Old Dominion University’s engineering management programs accommodate the needs of both full-time and part-time students. Courses are scheduled in the evening and also at off-campus sites in the Hampton Roads area.

Skills

The degrees are focused on the development of skill sets in the following areas:

- Operations Systems Analysis and Improvement
  Students acquire skills in the detailed technical analysis of complex operations from both qualitative and quantitative perspectives. Extensive use of data as a foundation for process analysis and improvement is emphasized.

- Technical Analysis
  Students develop a comprehensive set of techniques and methods that support the technical analysis of process, organizational and production issues faced in the technical enterprise. Emphasis is placed on the collection, rigorous analysis, interpretation and effective communication of data.

- Project Management
  Students engage in the traditional planning, scheduling and control functions of project management to provide for control of work, costs, schedules and performance. In addition, students apply advanced engineering concepts and techniques to the design, evaluation and transformation of project issues beyond the scope of cost, schedule and performance.

- Organizational Analysis
  Students become skilled in the language, concepts and principles related to effective integration of technical, structural and human aspects of organizations. Emphasis is placed on identification and resolution of organizational issues within technology-based enterprises.

- Complex Systems
  Students are exposed to state-of-the-art research and development in the application of systems engineering to address complex technical problems. Systems engineering is applied through rigorous life-cycle design, operation, analysis and transformation of systems to address problems or meet customer needs.

- Engineering Management Research
  Students are challenged to develop essential graduate-level research skills that provide a basis for generating a wider array of solutions to technical, managerial and organizational issues facing technology-based enterprises.

Admission Requirements

Applicants must have a bachelor’s degree from an accredited program in engineering, engineering technology or applied science, with a GPA of at least 3.00 for regular admission. Students with a GPA between 2.75 and 3.00 may be admitted provisionally based upon their work experience, academic preparation and Graduate Record Exam (GRE) scores. A minimum TOEFL score of 550 is required for all international students when English is not their first language.

Degree Requirements

All students must have completed mathematics coursework through the level of integral calculus, matrix algebra or differential equations, and calculus-based probability and statistics.

Core Courses (18 credit hours)

The engineering management curriculum has been designed around six core areas that develop the skill sets identified earlier and prepare graduates to assume positions within technology-based enterprises. The following core courses form the foundation of the curriculum:

- ENMA 600 – Cost Estimation and Financial Analysis
- ENMA 601 – Analysis of Organizational Systems
- ENMA 603 – Operations Research
- ENMA 604 – Project Management
- ENMA 614 – Quality Systems Design
- ENMA 715 – Systems Analysis

Electives (12 credit hours, MEM only)

In addition, MEM students select a set of four elective courses to focus on areas of particular interest for their personal and professional development. The electives may be selected from the department’s elective courses and from approved courses in other Batten College of Engineering and Technology departments and/or other colleges.

Capstone Course (1 credit hour, MEM only)

Students must register for a individual capstone project—ENMA 605 Program Capstone—after completing the core courses in the program. This course serves as a comprehensive examination of student progress in the program.
Location, Location, Location
Located in the Hampton Roads region of Virginia, Old Dominion University’s main campus in Norfolk offers a small-college look and feel, with tree-lined walkways, a mix of old and new buildings, colorful gardens, ponds and fountains.

The Hampton Roads region in southeast Virginia, with a population of 1.6 million, is home to a vibrant technology industry, several national laboratories, one of the nation’s busiest maritime ports, and among the world’s largest military complexes. The main campus is just minutes from the popular Virginia Beach oceanfront and historic Colonial Williamsburg and a few hours from the Shenandoah Valley and Washington, D.C. The climate is mild and is the warmest of Virginia’s regions due to the influence of the Atlantic Ocean and Chesapeake Bay.

Old Dominion University
Old Dominion University was founded in 1930 as a division of the College of William and Mary. The University is changing lives through engaging and exciting teaching and innovative and cutting-edge research. The University is classified by the Carnegie Foundation as a “Research University with High Research Activity.” With the principal marine and aerospace activities of the Commonwealth concentrated in Hampton Roads, the University has a significant commitment to science, engineering, and technology.

For Further Information and Application Requirements Contact:
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