

Master of Science

Engineering Management (MS)

Degree Description

The Master of Science in Engineering Management (MS) provides the foundation and the necessary skills, knowledge, and abilities required to design and manage the technology-based, project-driven enterprise. The Master of Science (M.S.) program requires thesis research, and the student is expected to identify an advisor and work with him/her starting from the first semester. Fundamentally, the engineering management program focuses on problems, design, and management of projects and complex operations. The program is grounded in solid principles of systems science while exploiting the tools of management science and project management. The coursework is designed to produce graduates capable of addressing issues related to the design, operation, analysis, and transformation of complex problems. Core coursework in the Master of Science in Engineering Management program concentrates on developing the knowledge and skills required by graduates to provide the project and program leadership and management necessary for an organization to develop and manage technologies.

The degree is directed at working professionals and traditional full-time students. The degree is available on campus in a live setting as well as online through synchronous web delivery. Courses are scheduled in the evenings and can be attended from off-campus sites, including the Peninsula Higher Education Center in Hampton and the Virginia Beach Higher Education Center. The complete MS in Engineering Management program is available through ODUGlobal and through the Commonwealth Graduate Engineering Program. Both programs transmit courses to educational, industrial, and government locations throughout Virginia and via a web-based platform.

Admission Requirements

Admission to the Master of Science in Engineering Management program is in accordance with Old Dominion University and Frank Batten College of Engineering and Technology requirements for master's programs as specified in this catalog.

Admission requirements specific to this program include the following:

1. Official transcripts from all post-secondary institutions attended.
2. Undergraduate degree from a U.S. ABET-accredited program in engineering or engineering technology with a GPA of 3.00 (out of 4.00) or better. Students who hold bachelor's degrees in other disciplines or who do not meet the GPA requirement may be considered for admission based on transcript evidence of applicable physics and calculus courses, a résumé indicating relevant work experience in an engineering discipline, and/or satisfactory GRE quantitative scores.
3. Résumé detailing relevant work experience.
4. Personal Statement that outlines the rationale for applying to the program and how it aligns with the student's professional goals.
5. Students not meeting the above requirements may be admitted provisionally. The Graduate Program Director may request additional information, including GRE scores.
6. International students must meet University admission requirements; please refer to the website: <https://www.odu.edu/admissions/proficiency> (<https://www.odu.edu/admissions/proficiency/>).

Curriculum Requirements

General Requirements

The Master of Science in Engineering Management (MSEM) is in accordance with the general requirements for master's degrees as specified in this Catalog. Students are required to identify an advisor as part of the program requirements. All students are expected to communicate effectively

both orally and in written documents, that are correct in grammar, style, and mechanics. Those deemed insufficient may be required to take remedial speech or writing courses. All students must have mathematics coursework through the level of integral calculus, matrix algebra or differential equations, and ENMA 420 or equivalent calculus-based probability and statistics. Students who have not had a calculus-based probability and statistics course will be required to include ENMA 420, or equivalent, as part of their plan of study in addition to the required 30 credits.

Curricular Requirements

The Master of Science in Engineering Management requires 30-credit hours of coursework (8 three-credit courses plus 2 three-credit thesis research courses). At least three-fifths (3/5) of coursework must be at the 600- or 700-level. Students must identify an advisor within completion of 9 credit hours. Students must maintain a GPA of 3.00 or better. Students must meet all University continuance requirements.

The following table delineates the specific course requirements for this program.

M.S. Courses

Required *		
ENMA 711	Engineering Research Methodology	3
ENMA 720	Multivariate Statistics for Engineering	3
Core		
Select four of the following:		12
ENMA 600	Cost Estimating 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 *		
Select electives		6
Thesis Research **		
Complete thesis research		6
Total Credit Hours		30

* Students must select six credit hours of elective coursework for the M.S.E.M. These electives may be selected from the available graduate level ENMA courses.

** M.S. students take six credits of thesis research, ENMA 699, or project hours ENMA 698, which must be spread over a minimum of two semesters.

Additional Requirements

Requirements for Graduation

In addition to completing all the required courses, all graduate students must complete the Collaborative Institutional Training Initiative (CITI) basic course, Responsible Conduct of Research for Engineers. The basic course includes the following modules: Misconduct (falsification, fabrication, and plagiarism); Data acquisition, management, sharing and ownership; Mentor/trainee relationships; Publication practice and responsible authorship; Peer review; Conflicts of interest; and Collaborative research. The RCR modules must be completed prior to completion of 12 semester hours. Students who fail to complete this requirement will have a registration hold placed on their records. Master of Science students must also pass a final examination in front of a thesis committee approved by the graduate program director.