

# MASTER OF SCIENCE IN THE FIELD OF ENGINEERING MANAGEMENT (STEM)

Offered on GW's main campus in Washington, DC, the master of science in engineering management is designed to provide the next generation of technical managers with the skills and expertise to keep technical organizations operating efficiently and ahead of their competitors.

Students may choose from four areas of focus to tailor their coursework. Required courses for each area can be found in this Bulletin (<http://bulletin.gwu.edu/engineering-applied-science/engineering-management-systems-engineering/engineering-management-ms/#requirementstext>).

- The crisis, emergency, and risk management focus area prepares graduates for careers in emergency management, business continuity, and safety and security, with specific expertise in managing risk for both an organization itself and its mission related to crises, emergencies and disasters. The curriculum emphasizes exposure to top practitioners and experts in the field.
- The economics, finance, and cost engineering focus area equips students with the skill to maximize efficiencies from both an engineering lens and a business perspective, through exposure to economic, finance and cost concepts and their applications to products and services.
- The engineering and technology management focus area equips students with the specialized business skills, frameworks, and technical acuity necessary to successfully manage modern technical organizations, creating engineers who are not only technically solid but also business and policy savvy.
- The environmental and energy management focus area, designed specifically for professionals in the rapidly expanding environmental and energy sectors, combines academic study and first-hand practical experience with direct exposure to decision-makers and top players in the environmental and energy management field.

This is a STEM designated program.

Visit the program website (<https://emse.engineering.gwu.edu/ms-engineering-management/>) for additional information.

## ADMISSIONS

**Please note: The admission requirements below are for the on-campus program. Admission requirements for the online program are available at the online programs website (<https://engineeringmasters.online.gwu.edu/admissions/>).**

Admission deadlines: Fall – January 15

Spring – September 1

Summer - March 1 (non-F1 visa seeking applicants)

**Standardized test scores:** The GRE General Test is optional for all applicants. For applicants who want to submit scores, they must be submitted officially from ETS using the institutional code 5246.

The Test of English as a Foreign Language (TOEFL), the academic International English Language Testing System (IELTS), or the PTE Academic is required of all applicants except those who hold a bachelor's, master's, or doctoral degree from a college or university in the United States or from an institution located in a country in which English is the official language, provided English was the language of instruction. Minimum scores:

- Academic IELTS: an overall band score of 7.0 with no individual score below 6.5; or

- TOEFL: 600 on paper-based or 100 on Internet-based; or

- PTE Academic: 68.

**Recommendations:** Two recommendations required. If possible, one recommendation should be from your advisor at the institution from which you earned your highest degree.

**Prior academic records:** Transcripts are required from all colleges and universities attended, whether or not credit was earned, the program was completed, or the credit appears as transfer credit on another transcript. Unofficial transcripts from all colleges and universities attended must be uploaded to your online application. Official transcripts are required only of applicants who are offered admission.

If academic records are in a language other than English, a copy in the original language and an English language translation must be uploaded. Transcript evaluations should not be uploaded. Applicants who have earned a degree from an Indian university are required to submit individual semester marksheets.

**Statement of purpose:** In an essay of 250 to 500 words, state your purpose in undertaking graduate study at The George Washington University; describe your academic objectives, research interests, and career plans; and discuss your related qualifications, including collegiate, professional, and community activities, and any other substantial accomplishments not already mentioned.

**Additional requirements:** Bachelor's degree with a GPA of at least 3.0 on a 4.0 scale for the last 60 hours of coursework. A grade of B- or better in MATH 1232 or its equivalent is prerequisite to all graduate programs offered by the Department. The Department requires that the applicant have a suitable bachelor's degree in an area such as engineering, a physical science, or mathematics.

All applicants must submit a resumé or CV. All main campus applicants must choose an area of focus that most closely matches their interests and note this on the online application.

International applicants only: Please follow this link - <https://graduate.admissions.gwu.edu/international-student-application-requirements> (<https://graduate.admissions.gwu.edu/international-student-application-requirements/>) - to review the International Applicant Information carefully for details on required documents, earlier deadlines for applicants requiring an I-20 or DS-2019 from GW.

For additional information about the admissions process visit the SEAS Admissions Frequently Asked Questions (<https://graduate.engineering.gwu.edu/admissions-frequently-asked-questions/>) page.

Contact for questions:

engineering@gwu.edu  
202-994-1802 (phone)  
202-994-1651 (fax)

Hours: 9:00 am to 5:00 pm, Monday through Friday

## REQUIREMENTS

The following requirements must be fulfilled: 36 credits, including 12 credits in required core courses and completion of a single focus area, each consisting of 12 credits in required courses and 12 credits in elective courses.

Code	Title	Credits
<b>Required</b>		
Core courses		
EMSE 6001	The Management of Technical Organizations	
EMSE 6410	Survey of Finance and Engineering Economics	
EMSE 6820	Program and Project Management	
EMSE 6099	Problems in Engineering Management and Systems Engineering	

Code	Title	Credits
Completion of one focus area selected from the following:		
Crisis, emergency, and risk management focus area		
Required		
EMSE 6305	Crisis and Emergency Management	

EMSE 6310 Information Technology in Crisis and Emergency Management

EMSE 6315 Risk Management, Hazard Analysis, and Risk-Based Decision Making

EMSE 6325 Medical and Public Health Emergency Management

Electives

Four courses (12 credits) selected in consultation with the focus area advisor.

Code	Title	Credits
Economics, finance, and cost engineering focus area		
Required		
EMSE 6020	Decision Making with Uncertainty	
EMSE 6420	Uncertainty Analysis in Cost Engineering	
EMSE 6430	Financial Management for Engineers	
EMSE 6450	Quantitative Methods in Investment Engineering	

Electives

Four courses (12 credits) selected in consultation with the focus area advisor.

Code	Title	Credits
Engineering and technology management focus area		
Required		
EMSE 6005	Organizational Behavior for the Engineering Manager	
EMSE 6020	Decision Making with Uncertainty	
EMSE 6035	Marketing Analytics for Design Decisions	
EMSE 6801	Systems Engineering I	

Electives

Four courses (12 credits) selected in consultation with the focus area advisor.

Code	Title	Credits
Environmental and energy management focus area		
Required		
EMSE 6220	Environmental Management	

EMSE 6245	Analytical Tools for Environmental Management
EMSE 6260	Energy Management
EMSE 6285	Analytical Tools for Energy Management
Electives	
Four courses (12 credits) selected in consultation with the focus area advisor.	

**Graduation and scholarship requirements**

Students are responsible for knowing the University’s minimum GPA requirement for graduation and scholarships. See Graduation and Scholarship Requirements ([http://bulletin.gwu.edu/engineering-applied-science/#graduation\\_requirements\\_ms](http://bulletin.gwu.edu/engineering-applied-science/#graduation_requirements_ms)) in this Bulletin. Students should contact the department for additional information and requirements.

**Program restrictions**

Normally, only courses at the 6000 level courses or above count toward the requirements for the graduate degree.