DOCTOR OF PHILOSOPHY IN THE FIELD OF SYSTEMS ENGINEERING (STEM, ON-CAMPUS)

The systems engineering program provides a broad knowledge of the "systems approach" for designing and managing large-scale engineering systems throughout the life cycle, with faculty and students exploring case studies and methodologies from NASA, the U.S. Department of Defense, and U.S. corporations.

Graduate students can pursue their degrees in one of two focus areas: operations research and management science or systems engineering and integration.

The doctoral program is individually tailored for each student. It is designed to provide students with the ability to perform substantive research in their areas of choice. Students benefit from working closely with faculty members whose applications research has been successfully used by major organizations.

GW's graduate-level systems engineering programs are offered at the University's campus in Arlington, VA. They are also offered on-site at U.S. corporate offices and facilities.

This is a STEM designated program.

- For additional on-campus program information, visit the on-campus program website (https://www.emse.seas.gwu.edu/doctor-philosophy/).
- For additional online program information, visit the online program website (https://seasonline.gwu.edu/doctoral-degrees/doctor-of-philosophy/).

ADMISSIONS

The admission requirements below are for the on-campus program. Admission requirements for the online program are available at the online programs website (https://seasonline.gwu.edu/apply-today/phd-program/).

Admission deadlines:

Fall – January 15
Spring – September 1
Summer* – March 1 (non-F1 visa seeking applicants)

Standardized test scores:

The Graduate Record Examination (GRE) is required of all applicants. (Institution 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 required:

Three (3) 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: Please write a comprehensive essay of 400 to 600 words, indicating your primary and supporting fields of study, your specialized interests, and the general subject area of your planned dissertation or professional project.

Additional requirements: Applicants whose highest earned degree is a master's degree should have a grade-point average of at least 3.5. Applicants without a master's degree must have a bachelor's degree with a GPA of at least 3.3 on a 4.0 scale.
All applicants should choose an area of focus that most closely matches their interests and note this on the online application. All applicants must submit a resumé or CV. Applicants to the doctoral program should identify one to three faculty members whose research interests most closely match their own and note this on the online application.

International applicants only: Please review International Applicant Information (https://graduate.admissions.gwu.edu/international-student-application-requirements/) carefully for details on required documents, earlier deadlines for applicants requiring an I-20 or DS-2019 from GW.
International applicants requiring a visa from GW are not eligible to apply for admission to the graduate certificate program, but may apply for the M.S., Ph.D., or professional degrees (App. Sc. or Engr.) in systems engineering.

*A limited number of doctoral applicants are accepted for the summer. Please contact the admissions office for details. International applicants who require a visa from GW are eligible to apply for admission in fall and spring only (not summer).

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:

The general requirements stated under School of Engineering, Doctoral Program Regulations (https://bulletin.gwu.edu/engineering-applied-science/#seasregulationstext).

Students entering the program with a relevant master's degree spend a minimum of three years in full-time residency for PhD studies. During that time they take a minimum of 36 credits in coursework, including at least 18 credits in dissertation research. Students entering the program with a master's degree that is not relevant are required to take up to 24 credits in additional coursework. Students entering with only a bachelor's degree are required to take 24 credits in additional coursework.

Code	Title	Credits
Required		
EMSE 6765	Data Analysis for Engineers and Scientists	
EMSE 8000	Research Formulation in Engineering Management and Systems Engineering	
EMSE 8001	Research Methods for Engineering Management and Systems Engineering	
Electives		
At least 9 credits in courses selected in consultation with the academic advisor.		
Dissertation research		
EMSE 8999	Dissertation Research (taken for a minimum of 18 credits)	

Additional requirements

1. To advance to the research phase, students must achieve a minimum GPA of 3.4 with no grade below *B-* at the completion of their coursework.
2. Coursework must be finished within three years (five years for direct admits) of the start of the PhD program.
3. Within three years of the start of the program (five years for direct admits), students must attempt the doctoral qualifying examination and have a maximum of two attempts to pass the exam.
4. Within five years of the start of the program (seven years for direct admits), students must complete their research proposal and successfully defend it to a committee of three members, at least two of which must be from the EMSE Department. Students

have a maximum of two attempts to successfully pass their research proposal defense.

5. Within seven years of the start of the program (nine years for direct admits), students must complete their research dissertation and successfully defend it to a committee of five members, at least three of which must be from the EMSE Department and one from outside the EMSE Department. Students have a maximum of two attempts to successfully pass their dissertation defense.