ENGINEERING MANAGEMENT AND SYSTEMS ENGINEERING

Mission Statement
The mission of the Department of Engineering Management and Systems Engineering is to deliver an integrated program of research, teaching, and public service to the technology community. The Department develops creative leadership to bridge dynamic, complex technologies and societal needs. This includes delivering instruction in the management of technology and in systems engineering, operations research, and allied fields to undergraduate and graduate students who are preparing to assume leadership roles as technology professionals. The Department’s programs provide an understanding of the managerial role, analysis of the diverse functions of technology-based organizations, and instruction in modern management and mathematical analysis and modeling tools as they apply to formulating and executing decisions in engineering and scientific organizations. In addition, research programs feature the study of the management of technology; fundamental and applied research in systems engineering and operations, with a particularly strong interest in stochastic analysis and system optimization; sponsorship from government, industry, and the technology community; and a strong presence in refereed professional journals and leadership in professional societies.

Educational Objectives
The systems engineering undergraduate program of study prepares graduates for work as systems engineers in a variety of professional fields and for continuing study at the graduate level. The educational objectives include conveying the expectations of an ethical and professional work environment where graduates fully engage with both technical and non-technical colleagues.

Educational Outcomes
A systems engineering graduate will have achieved the knowledge and the skills to:
1. Apply the fundamentals of systems engineering, including needs elicitation, requirements elaboration, design option analyses, architectural trade studies, system traceability methods, configuration baseline and management, and engineering change process;
2. Understand the complexity in large systems development and operations;
3. Communicate effectively to convey complex systems information to a variety of audiences;
4. Participate effectively in team-based projects; and
5. Demonstrate the application of systems engineering skills through the development and completion of a large capstone project.

UNDERGRADUATE
Bachelor's programs
- Bachelor of Arts with a major in applied science and technology (http://bulletin.gwu.edu/engineering-applied-science/engineering-management-systems-engineering/bs-applied-science-technology)
- Bachelor of Science with a major in systems engineering (http://bulletin.gwu.edu/engineering-applied-science/engineering-management-systems-engineering/bs-systems-engineering)

GRADUATE
Master's programs
- Master of Science in the field of engineering management (http://bulletin.gwu.edu/engineering-applied-science/engineering-management-systems-engineering/engineering-management-ms)
- Master of Science in the field of systems engineering (http://bulletin.gwu.edu/engineering-applied-science/engineering-management-systems-engineering/systems-engineering-ms)

Doctoral program
- Doctor of Engineering in the field of Engineering Management (http://bulletin.gwu.edu/engineering-applied-science/engineering-management-systems-engineering/doctor-engineering-management)

CERTIFICATES
Certificate programs offered by the Department of Engineering Management and Systems Engineering include:
- Graduate certificate in homeland security emergency preparedness and response
- Graduate certificate in emergency management and public health
- Graduate certificate in engineering and technology management
- Graduate certificate in greenhouse gas management (http://bulletin.gwu.edu/engineering-applied-science/engineering-management-systems-engineering/greenhouse-gas-management-certificate)
- Graduate certificate in knowledge and information management
- Graduate certificate in systems engineering

FACULTY
Professors J.P. Deason, J.R. van Dorp, T.A. Mazzuchi (Chair), S. Sarkani
**Associate Professors** H. Abeledo, J.A. Barbera, M.R. Duffey, J.J. Ryan, G.L. Shaw

**Assistant Professors** D. Broniatowski, R.A. Francis, E. Gralla, J.R. Santos, E. Shittu, Z. Szajnfarber,


**COURSES**

**Explanation of Course Numbers**

- Courses in the 1000s are primarily introductory undergraduate courses
- Those in the 2000-4000s are upper-division undergraduate courses that can also be taken for graduate credit with permission and additional work
- Those in the 6000s and 8000s are for master’s, doctoral, and professional-level students
- The 6000s are open to advanced undergraduate students with approval of the instructor and the dean or advising office
- Applied Sciences (APSC) (http://bulletin.gwu.edu/courses/apsc)
- Engineering Management and Systems Engineering (http://bulletin.gwu.edu/courses/emse)