Information Session
Thursday, July 8, 2021

Doctor of Engineering
in the fields of:

Cybersecurity Analytics
or
Engineering Management

Classes Begin
August 2021

Shahram Sarkani, Ph.D., P.E.
Professor of Engineering Management and Systems Engineering
Director, SEAS Online Programs
Information Session Agenda

✓ Overview of The George Washington University

✓ Doctor of Engineering (D.Eng.) Degrees
  • Overview
  • Academic Requirements
  • Application Information

✓ Q & A Session
The George Washington University

- Chartered in 1821 by an Act of Congress
- 10 colleges and schools, including the School of Engineering & Applied Science
- More than 15,000 graduate students
- Alumni network of over 300,000 living alumni in 134 countries
- Accredited by the Middle States Commission on Higher Education
- GW’s Online Graduate Engineering Programs ranked #14 by US News
- GW’s Online Graduate Engineering Programs Ranked #13 for Veterans by the US News
Our Online Program

→ Online classes meet synchronously via Zoom and are recorded for viewing during the semester

→ Supported by Blackboard, GW’s web-based course management software

→ Exams are taken through a secure testing platform, Remote Proctor Now (RPNow)
Doctor of Engineering Program Overview

• 45 credit hours (minimum)

• Classroom Phase
  • 10 graduate-level, 3-credit-hour courses

• Research Phase
  • Minimum 15 credit hours of praxis development
  • Praxis defense

• Program Begins: August 2021

• Planned Program Completion: August 2023
D.Eng. Research Phase

• After completion of the classroom phase with a GPA of 3.2 or higher, and no grade below B-, students begin praxis research

• Praxis Research
  • During this stage, students will develop and defend praxis
  • Minimum half-hour individual research meetings initially every other week
  • Praxis defenses are scheduled for the end of the final semester of research

• Research course EMSE 8199 or SEAS 8199 Praxis Research
  • Session I: Fall 2022, 6 credit hours
  • Session II: Spring 2023, 6 credit hours
  • Session III: Summer 2023, 3 credit hours
  • One to two semesters extension through Spring 2024 (6 credit hours each) may be granted.
Program Overview

Doctor of Engineering (D.Eng.)

Engineering Management
D.Eng. Field of Study
Engineering Management

Bridges the gap between engineering and management. EM enables engineers to work most effectively in the business environment. A degree in EM provides a technical-based alternative to traditional business programs. Candidates specialize in such areas as management of technology, product and process, quality, organizational management, operations management, program management, marketing and finance.
D.Eng. in Engineering Management Curriculum

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMSE 6045</td>
<td>International Technology Commercialization</td>
</tr>
<tr>
<td>EMSE 6115</td>
<td>Uncertainty Analysis for Engineers</td>
</tr>
<tr>
<td>EMSE 6420</td>
<td>Uncertainty Analysis in Cost Engineering</td>
</tr>
<tr>
<td>EMSE 6547</td>
<td>Cyber Resilience</td>
</tr>
<tr>
<td>EMSE 6710</td>
<td>Applied Optimization Modeling</td>
</tr>
<tr>
<td>EMSE 6765</td>
<td>Data Analysis for Engineers and Scientists</td>
</tr>
<tr>
<td>EMSE 6769</td>
<td>Machine Learning for Engineers</td>
</tr>
<tr>
<td>EMSE 6790</td>
<td>Logistics Planning</td>
</tr>
<tr>
<td>EMSE 8099</td>
<td>Survey of Research Formulation for Engineering Management</td>
</tr>
<tr>
<td>EMSE 8100</td>
<td>The Praxis Proposal</td>
</tr>
</tbody>
</table>

Schedules, regulations and policies subject to change; course substitution in the curriculum is usual and should be expected.
# D.Eng. in Engineering Management Course Schedule

<table>
<thead>
<tr>
<th>Session</th>
<th>#Courses</th>
<th>#Credit Hours</th>
<th>Tentative Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall-1 2021</td>
<td>2</td>
<td>6</td>
<td>August 14 – October 16, 2021</td>
</tr>
<tr>
<td>Fall-2 2021</td>
<td>2</td>
<td>6</td>
<td>October 23 - January 15, 2022</td>
</tr>
<tr>
<td>Spring-1 2022</td>
<td>2</td>
<td>6</td>
<td>January 22 – March 26, 2022</td>
</tr>
<tr>
<td>Spring-2 2022</td>
<td>2</td>
<td>6</td>
<td>April 2 – June 4, 2022</td>
</tr>
<tr>
<td>Summer 2022</td>
<td>2</td>
<td>6</td>
<td>June 11 – August 13, 2022</td>
</tr>
</tbody>
</table>

*No classes on Thanksgiving, Christmas, and New Year Weekends*

- 2 courses per session
- Each session is 10 weeks long
- Classes meet on Saturdays
  - Morning Class 9:00a-12:00p (Eastern)
  - Afternoon Class 1:00p-4:00p (Eastern)
Praxis Research Areas: Engineering Management

Sample Praxis Titles from Previously Published D.Eng. In Engineering Management Praxis Papers

- A Technology Maturity Assessment of Sustainment-Dominated Systems under the Influence of Obsolescence
- A Generalized Approach to Measure and Predict Innovation Maturity Progression Aligned to Business Objectives
- Reducing Time and Cost Overruns for Aerospace Development Programs Using Precedence Networks Patterns
- Identifying and Overcoming the Barriers to Cloud Adoption within the Government Space
- A Decision Support Tool for Designing Energy-efficient Residential Buildings at the Early Planning and Design Stage
Program Overview

Doctor of Engineering (D.Eng.)
Cybersecurity Analytics
The D.Eng. in Cybersecurity Analytics empowers the student to plan and implement security measures to protect an organization’s network and systems, implement strategies to track threats and monitor networks for security breaches, build secure and resilient computer systems with subject matter expertise in cybersecurity analytics, advanced tools and techniques for ensuring confidentiality, integrity, and availability of an organization’s data and systems.
# D.Eng. in Cybersecurity Analytics Curriculum

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CSCI 6015</td>
<td>Cyber Forensics</td>
</tr>
<tr>
<td>CSCI 6016</td>
<td>Applied Network Defense</td>
</tr>
<tr>
<td>CSCI 6532</td>
<td>Information Policy</td>
</tr>
<tr>
<td>ECE 6160</td>
<td>Secure Computer Architecture</td>
</tr>
<tr>
<td>SEAS 8410</td>
<td>Security Data Analysis &amp; Visualization</td>
</tr>
<tr>
<td>SEAS 8414</td>
<td>Analytical Tools for Cyber Analytics</td>
</tr>
<tr>
<td>SEAS 8415</td>
<td>Applied Cryptography and Data Protection</td>
</tr>
<tr>
<td>SEAS 8499</td>
<td>Praxis Development for Cybersecurity</td>
</tr>
<tr>
<td>SEAS 8998</td>
<td>Advanced Reading and Research, Part 1</td>
</tr>
<tr>
<td>SEAS 8998</td>
<td>Advanced Reading and Research, Part 2</td>
</tr>
</tbody>
</table>

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## D.Eng. in Cybersecurity Analytics Course Schedule

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<td>2</td>
<td>6</td>
<td>August 28 – October 30, 2021</td>
</tr>
<tr>
<td>Fall- 2 2021</td>
<td>2</td>
<td>6</td>
<td>November 6 - January 29, 2022</td>
</tr>
<tr>
<td>Spring-1 2022</td>
<td>2</td>
<td>6</td>
<td>February 5 – April 9, 2022</td>
</tr>
<tr>
<td>Spring-2 2022</td>
<td>2</td>
<td>6</td>
<td>April 16 – June 18, 2022</td>
</tr>
<tr>
<td>Summer 2022</td>
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<td>6</td>
<td>June 25 – August 27, 2022</td>
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  - Afternoon Class 1:00p-4:00p (Eastern)
Praxis Research Areas

Cybersecurity Analytics

Sample Praxis Research Areas

• Addressing the Cybersecurity Malicious Insider threat
• Exploring Cybersecurity Requirements in the Defense Acquisition Process
• Internet of Things Device Cybersecurity
• Cybersecurity of Networked Home Medical Devices
• Cybersecurity Challenges in Healthcare Industries
Doctor of Engineering
Tuition & Fees

2021-2022 Academic Year:

$1,570 per credit

• Digital textbooks and software are provided at no additional charge
Application Process

Application Packet requires:

• Online Application Form, Available at:
  Cybersecurity Analytics:
  https://seasonline.gwu.edu/apply-today/doctor-of-engineering-cybersecurity-analytics/
  Engineering Management:
  https://seasonline.gwu.edu/apply-today/doctor-of-engineering-program/

• Current Resume
• Statement of Purpose
• Official Academic Transcripts

Applications are reviewed until the cohort is full

All submitted materials remain property of SEAS Online Programs
Application Process: Transcripts

Electronic Transcripts:
Send to: applyonline@gwu.edu

Paper Transcripts:
Send via United States Postal Service mail to:
SEAS Online Programs Office
The George Washington University
170 Newport Center Drive
Suite 260
Newport Beach, CA 92660

*All Transcripts must be sent directly from the institution*
Application Process

• Admission decisions are made on a rolling basis and communicated via email.

• Admitted applicants must complete and return a reply card and a non-refundable tuition deposit of $495 by the deadline provided in admission letter. Tuition deposit is applied to the first session’s tuition.
Contact Information

SEAS Online Programs Office
Shahram Sarkani, Ph.D., P.E., Director
Thomas A. Mazzuchi, D.Sc., Co-Director

- Admissions Team
  - applyonline@gwu.edu
  - Tel: 833-330-1454, option #1

- Doctoral Administrative Team
  - seasdoc@gwu.edu

- Online Technical Support Team
  - seasonline@gwu.edu
  - Tel: 202-422-2806
Answers to Frequently Asked Questions

• Application to only one D.Eng. field of study is permitted.
• Transfer credit is not allowed toward doctoral programs.
• Students should expect to spend approximately 20 hours a week on coursework/research, including class attendance.
• Your research advisors will be assigned by the SEAS Online Programs Office after the successful completion of your coursework.
Any Questions?

To protect your privacy, questions regarding individuals’ specific application, degrees, background, or experience will not be answered during this Q&A session.