Doctor of Engineering in the field of Cybersecurity Analytics

Information Session
Thursday, November 3rd

Classes Begin January 2023

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.) in Cybersecurity Analytics
  • 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 #16 by US News
- GW’s Online Graduate Engineering Programs Ranked #14 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)

• The degree and diploma are identical to that of the main campus
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.
Program Overview

- Classroom Phase (1 year, 30 credit hours)
  - 10 graduate-level, 3-credit-hour courses
- Research Phase (1 year, 15 credit hours)
  - Minimum of 3 semesters of praxis research
  - Culminates in Praxis defense
- Total of 45 credit hours (minimum)
- Program Begins: January 2023
- Target Graduation Date: December 2024
Curriculum

CSCI 6015  Cyber Forensics
CSCI 6016  Applied Network Defense
ECE 6160  Secure Computer Architecture
SEAS 6800A Special Topics: Challenges in Cybersecurity
SEAS 6800B Special Topics: Cybersecurity Architectures
SEAS 6800C Special Topics: Python Applications in Cyber Analytics
SEAS 8410  Security Data Analysis & Visualization
SEAS 8414  Tools for Cyber Analytics
SEAS 8415  Applied Cryptography and Data Protection
SEAS 8499  Praxis Development for Cybersecurity

Schedules, regulations and policies subject to change; course substitution in the curriculum is usual and should be expected.
No classes on Memorial Day, Thanksgiving, Christmas, and New Year Weekends

- 2 courses per session
- Each session has 10 class meetings
- Classes meet on Saturdays
  - Morning Class 9:00a-12:00p (Eastern)
  - Afternoon Class 1:00p-4:00p (Eastern)

<table>
<thead>
<tr>
<th>Session</th>
<th>#Courses</th>
<th>#Credit Hours</th>
<th>Tentative Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring-1 2023</td>
<td>2</td>
<td>6</td>
<td>January 7 — March 11, 2023</td>
</tr>
<tr>
<td>Spring-2 2023</td>
<td>2</td>
<td>6</td>
<td>March 18 — May 20, 2023</td>
</tr>
<tr>
<td>Summer 2023</td>
<td>2</td>
<td>6</td>
<td>June 3 — August 5, 2023</td>
</tr>
<tr>
<td>Fall-1 2023</td>
<td>2</td>
<td>6</td>
<td>August 12 – October 14, 2023</td>
</tr>
<tr>
<td>Fall-2 2023</td>
<td>2</td>
<td>6</td>
<td>October 21 — January 13, 2024</td>
</tr>
</tbody>
</table>
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
  • Minimum half-hour individual research meetings initially every other week
  • During this stage, students will develop and write a praxis
  • Praxis defenses are scheduled for the end of the final semester of research

• Research course SEAS 8499 Praxis Research
  • Session I: Spring 2024, 6 credit hours
  • Session II: Summer 2024, 3 credit hours
  • Session III: Fall 2024, 6 credit hours

<table>
<thead>
<tr>
<th>Grade</th>
<th>GPA Pts</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4</td>
</tr>
<tr>
<td>A-</td>
<td>3.7</td>
</tr>
<tr>
<td>B+</td>
<td>3.3</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
</tr>
<tr>
<td>B-</td>
<td>2.7</td>
</tr>
</tbody>
</table>
Praxis Research Areas

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 Medical Devices
- Cybersecurity Challenges in Aerospace Industries
Admissions Requirements

• Bachelor’s and master’s degrees in information technology, computer science, applied science, engineering or related field from accredited institutions

• A minimum graduate level GPA of 3.2

• Relevant professional experience

• A minimum of two college-level calculus courses
  • Applicants who do not have a grade of C or better in two calculus courses but are otherwise qualified for admission will be required to take an additional course EMSE 4197
  • Offered November 14-December 19, 2022 on Monday & Wednesday (8-10pm) and Saturday (1-4pm). No Class Nov. 26
Application Process

Online Application Form, available at:
https://seasonline.gwu.edu/apply/doctor-of-engineering-cyber/

Official Academic Transcripts:

• Send Electronic Transcripts to seasdeng@gwu.edu

• Send Paper Transcripts 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

All submitted materials remain property of SEAS Online Programs
Final Application Deadline: November 15, 2022
Admitted Students

- Admission decisions are communicated via email.
- Admitted applicants must return a reply card and a non-refundable tuition deposit of $995 (applied to the first session's tuition) in order to secure their slot in the cohort.
- Tuition for 2022-2023 Academic Year is $1,625 per credit
Contact Information

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

- **Admissions Team**
  - seasdeng@gwu.edu
  - Tel: 833-330-1454

- **Doctoral Administrative Team**
  - seasdoc@gwu.edu

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

• 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 topic will be finalized during your last session (SEAS 8499)
• Your research advisor 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.