Graduate Programs in SYSTEMS ENGINEERING

UMBC
AN HONORS UNIVERSITY IN MARYLAND

Master of Science:
Systems Engineering

Post-Baccalaureate Certificate:
Systems Engineering

Systems Engineering - a professionally-focused and relevant graduate degree

- Discover how to develop systems that meet customer requirements while navigating the complexities of system design.
- Explore the entire systems engineering life cycle, including requirements analysis, systems architecture and design, modeling, simulation and analysis, and system implementation and test.
- Learn to lead systems engineering teams.

When you choose UMBC Professional Programs, you can count on:

- Courses developed and taught by industry experts and designed to address real-world problems in the workplace.
- Programs that combine practical business approach with in-depth technical courses plus an emphasis on how to lead people and manage complex projects.
- Flexible evening class schedule that accommodates working professionals.
- Wide-ranging resources offered at a top-notch public research university.

Why UMBC?

- UMBC provides a comprehensive and quality education at a manageable cost.
- For six years running, UMBC was ranked #1 in the U.S. New and World Report's list of 'national up-and-coming' universities, and in 2015 ranked #4 as 'most innovative schools.'
- UMBC is classified by the Carnegie Foundation as a Research University (High Research Activity).
- UMBC is uniquely positioned to provide education and training that respond to the state's need for qualified technical professionals in the engineering field.

umbc.edu/se

For Program Information:
Dr. Thomas Moore
Program Director
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For Application Information:
Kim Edmonds
Program Coordinator
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Admission Requirements

M.S. and Graduate Certificate:

- A bachelor's degree in Engineering, Computer Science or Information Systems.
- Minimum undergraduate GPA of 3.0 on a 4.0 scale
- Letters of recommendation and GRE scores are not required for applicants with a degree from an accredited U.S. institution.

International Applicants:

Please visit umbc.edu/se/international for detailed admissions requirements for international applicants.

- Please pay special attention to English proficiency and testing requirements

Admission Deadlines

Fall: August 1
Spring: December 1

For detailed application process please visit: umbc.edu/se

Office of Professional Programs

UMBC's Office of Professional Programs offers a broad array of professionally focused master's degree and certificate programs that address industry needs while anticipating future opportunities.

umbc.edu/professionalprograms

Master's Program

Master of Science (M.S.): Systems Engineering
30 Credits (10 courses)

Systems Engineering Required Core Courses (18 Credits)

- ENEE 660: Systems Engineering Principles
- ENEE 661: System Architecture and Design
- ENEE 662: System Modeling, Simulation, and Analysis
- ENEE 663: System Implementation, Integration, and Test
- ENEE 670: Systems Engineering Project
- ENEE 672: Decision and Risk Analysis

Technical Breadth Courses (No More Than 9 Credits)

- ENMG 668: Project and Systems Engineering Management
- ENMG 652: Management, Leadership and Communication
- ENMG 654: Leading Teams and Organizations
- ENGM 659: Strategic Management
- CYBR 621: Cyber Warfare
- CYBR 622: Global Cyber Capabilities and Trends
- CYBR 623: Cybersecurity Law and Policy

Technical Depth Courses (At Least 3 Credits)

- ENEE 664: Advanced System Architecture
- ENEE 666: Architecting Security
- ENEE 667: Advanced Systems Engineering Processes (2 credits)
- ENMG 664: Quality Engineering and Management
- ENEE 669: Mathematics and MATLAB fundamentals (1 credit)
- CYBR 620: Introduction to Cybersecurity
- CMPE 685: Introduction to Communications Networks
- Other Engineering, Computer Engineering, Computer Science, Information Systems, and Health IT Courses

Students are urged to confer with the Systems Engineering Program Director, Dr. Thomas Moore (mooretg@umbc.edu) for selection of elective courses to ensure that graduation requirements are met.

Certificate Program

Post-Baccalaureate Certificate: Systems Engineering
5 Required Courses (15 Credits)

OPTION A

- ENEE 660: Systems Engineering Principles
- ENEE 661: System Architecture and Design
- ENEE 662: System Modeling, Simulation, and Analysis
- ENEE 663: System Implementation Integration, and Test
- ENEE 670: Systems Engineering Project

OPTION B

- ENEE 660: Systems Engineering Principles
- ENEE 661: System Architecture and Design
- ENEE 663: System Implementation, Integration, and Test
- ENEE 672: Decision and Risk Analysis
- ENEE 670: Systems Engineering Project

Please consult umbc.edu/se for schedule.

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