

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 encountered in designing systems.
- » 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.
- » The 2017 *U.S. News & World Report Best Colleges* guide ranks UMBC in the top five on its closely-watched Most Innovative Schools list and has recognized UMBC as a global leader in higher education.
- » 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:

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For Application Information:

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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
- » GRE scores are not required
- » Letters of recommendation are not required for applicants with a degree from 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

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	ENGM 659: Strategic Management
ENMG 652: Management, Leadership and Communication	CYBR 621: Cyber Warfare
ENMG 654: Leading Teams and Organizations	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	CYBR 620: Introduction to Cybersecurity
ENEE 666: Architecting Security	CMPE 685: Introduction to Communications Networks
ENEE 667: Advanced Systems Engineering Processes (2 credits)	Other Engineering, Computer Engineering, Computer Science, Information Systems, and Health IT Courses
ENMG 664: Quality Engineering and Management	
ENEE 669: Mathematics and MATLAB fundamentals (1 credit)	

Students are urged to confer with the Systems Engineering Program Director for selection of elective courses to ensure that graduation requirements are met.

Certificate Program

Post-Baccalaureate Certificate: Systems Engineering 4 Required Courses (12 Credits)

OPTION A

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

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

Please consult umbc.edu/se for schedule.

This academic program is a participant in the U.S. Department of Education Gainful Employment program. For more information, <http://ged.financialaid.umbc.edu/sys/Gedt.html>

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