

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.



se.umbc.edu

For Program Information:

Dr. Neil Rothman
Program Director
nrothman@umbc.edu

Dr. Toby Gouker
Assistant Program Director
tgouker@umbc.edu

For Application Information:

Kim Edmonds
Program Coordinator
kedmonds@umbc.edu | 410-455-3445

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 se.umbc.edu/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: se.umbc.edu

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



Systems Engineering Electives (12 credits)

ENMG 668: Project and Systems Engineering Management
ENMG 652: Management, Leadership and Communication
ENMG 654: Leading Teams and Organizations

ENMG 659: Strategic Management
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)

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

Other Engineering, Computer Engineering, Computer Science, Information Systems, and Health IT Courses

Certificate Program

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

ENEE 660: Systems Engineering Principles	ENEE 663: System Implementation, Integration, and Test
ENEE 661: System Architecture and Design	ENEE 669: Mathematics and MATLAB Fundamentals for Engineers
ENEE 662 (*) (**): System Modeling, Simulation, and Analysis	
OR	
ENEE 672: Decision and Risk Analysis	

Please consult se.umbc.edu for schedule.

(*) ENEE 662 has a prerequisite of either passing ENEE 669 or testing out of the class. See the instructor for details. ENEE 669 is a one credit course.

(**) Students enrolled in the Masters program for Electrical Engineering or Computer Science must take

This academic program is a participant in the U.S. Department of Education Gainful Employment program. For more information, <https://gradschool.umbc.edu/resources/careers/gainfulemploy/>

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.

professionalprograms.umbc.edu