Graduate Programs in
SYSTEMS ENGINEERING

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.

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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 [se.umbc.edu/international](http://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](http://se.umbc.edu)

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**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](http://professionalprograms.umbc.edu)

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**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)**

- ENEE 664: Advanced System Architecture
- ENEE 666: Architecting Security
- ENEE 667: Advanced Systems Engineering Processes (2 credits)
- ENEE 669: Mathematics and MATLAB Fundamentals (1 credit)
- ENMG 664: Quality Engineering and Management
- ENMG 652: Management, Leadership and Communication
- ENMG 654: Leading Teams and Organizations
- ENMG 659: Strategic Management
- ENMG 668: Project and Systems Engineering Management
- ENMG 652: Management, Leadership and Communication
- ENMG 654: Leading Teams and Organizations

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

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**Certificate Program**

**Post-Baccalaureate Certificate: Systems Engineering**

4 Required Courses (12 Credits)

- ENEE 660: Systems Engineering Principles
- ENEE 661: System Architecture and Design
- OR
- ENEE 662 (**) System Modeling, Simulation, and Analysis
- ENEE 663: System Implementation, Integration, and Test
- ENEE 669: Mathematics and MATLAB Fundamentals for Engineers
- ENMG 668: Project and Systems Engineering Management
- ENMG 652: Management, Leadership and Communication
- ENMG 654: Leading Teams and Organizations

*Please consult [se.umbc.edu](http://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