Graduate Program in Systems Engineering

Master’s 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.
# ADMISSIONS REQUIREMENTS

- 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

# ADMISSIONS DEADLINES

- **Fall:** August 1
- **Spring:** December 1

For detailed application process please visit se.umbc.edu

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# Master’s of Science (M.S.): Systems Engineering

**30 Credits (10 courses)**

## REQUIRED CORE COURSES

18 CREDITS

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

## ELECTIVE COURSES

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
- SYST 664: Advanced System Architecture
- SYST 673: Advanced Systems Engineering Processes (2 credits)
- ENMG 664: Quality Engineering and Management
- SYST 669: Mathematics and MATLAB Fundamentals (1 credit)
- SYST 691: Topics in Systems Engineering

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

## POST-BACCALAUREATE CERTIFICATE: SYSTEMS ENGINEERING

**4 REQUIRED COURSES (12 CREDITS)**

- SYST 660: Systems Engineering Principles
- SYST 661: System Architecture and Design
- SYST 662 ( *) (**): System Modeling, Simulation, and Analysis

OR

- SYST 672: Decision and Risk Analysis
- SYST 663: System Implementation, Integration, and Test
- SYST 669: Mathematics and MATLAB Fundamentals for Engineers

Please consult se.umbc.edu for schedule.

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

(**) Students enrolled in the Masters program for Electrical Engineering or Computer Science must take SYST 662.

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/