Graduate Programs in
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.

For Program Information:
Dr. Toby Gouker
Program Director
tgouker@umbc.edu

For Application Information:
Kim Edmonds
Program Coordinator
kedmonds@umbc.edu | 410-455-3445

umbc.edu/se
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

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

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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

**Technical Breadth Courses (No More Than 9 Credits)**

<table>
<thead>
<tr>
<th>ENMG 668: Project and Systems Engineering Management</th>
<th>ENGM 659: Strategic Management</th>
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<tbody>
<tr>
<td>ENMG 652: Management, Leadership and Communication</td>
<td>CYBR 621: Cyber Warfare</td>
</tr>
<tr>
<td>ENMG 654: Leading Teams and Organizations</td>
<td>CYBR 622: Global Cyber Capabilities and Trends</td>
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</tbody>
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**Technical Depth Courses (At Least 3 Credits)**

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<tr>
<th>ENEE 664: Advanced System Architecture</th>
<th>CYBR 620: Introduction to Cybersecurity</th>
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<tbody>
<tr>
<td>ENEE 666: Architecting Security</td>
<td>CMPE 685: Introduction to Communications Networks</td>
</tr>
<tr>
<td>ENEE 667: Advanced Systems Engineering Processes (2 credits)</td>
<td>Other Engineering, Computer Engineering, Computer Science, Information Systems, and Health IT Courses</td>
</tr>
<tr>
<td>ENMG 664: Quality Engineering and Management</td>
<td>CYBR 623: Cybersecurity Law and Policy</td>
</tr>
<tr>
<td>ENEE 669: Mathematics and MATLAB fundamentals (1 credit)</td>
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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)

**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