



**UMBC**  
AN HONORS UNIVERSITY IN MARYLAND

# ENGINEERING MANAGEMENT GRADUATE PROGRAMS

The Engineering Management Program at UMBC offers a Master of Science in Engineering Management and a Graduate Certificate in Engineering Management. UMBC's program combines a practical business approach with in-depth technical courses and emphasizes how to lead people and manage complex projects. Our engineering management courses are developed and taught by industry experts and are designed to address real-world problems in the workplace.

The Engineering Management Program at UMBC is designed to help maximize technical and business skills and is ideally suited for engineers employed in technology-oriented enterprises or government programs.

## Our offerings include:

### **Master of Science: ENGINEERING MANAGEMENT (30 Credits)**

The Master of Science in Engineering Management provides students with a basic and focused set of management and leadership skills coupled with advanced skills in a specific technical area. Students choose a technical specialization based on interest, technical background, and employment. The combination of these advanced skills and knowledge helps students integrate technical experience and management of technology-based enterprises or government functions.

### **Post-Baccalaureate Certificate: ENGINEERING MANAGEMENT (12 Credits)**

This graduate certificate is the perfect solution for experienced engineers with a specific need for management education.

The Post-Baccalaureate Certificate in Engineering Management is designed to help complement your existing disciplinary expertise with new management and leadership skills. This program is designed for engineers employed in technology-oriented enterprises or government programs. All of the courses in the graduate certificate program can be applied to the Master of Science in Engineering Management.

## **ADMISSION REQUIREMENTS**

### **For Master's Degree and Graduate Certificates:**

- B.S. degree in Engineering, Computer Science or Information Systems
- Minimum undergraduate G.P.A. of 3.0 on a 4.0 scale
- GRE scores are not required if undergraduate degree was completed at an accredited U.S. university
- Current resume: submit as additional document during application process or email to [kedmonds@umbc.edu](mailto:kedmonds@umbc.edu)

### **International Students:**

- GRE minimum scores: Quantitative Reasoning: 153, Verbal Reasoning 150, and Analytical Writing 3.5
- English language proficiency minimum scores (no more than 2 years old): TOEFL iBT: 99 or IELTS: 7.0
- GRE scores are not required if your undergraduate degree was completed at an accredited U.S. university

## **APPLICATION INFORMATION**

Applications are accepted year round. International applications are accepted for the fall and spring semesters in order to accommodate full time enrollment. Students may enter the program as a master's degree or graduate certificate student. Those interested in enrolling in a course or two for professional development, should pursue the non-degree option.

## **COSTS**

### **Maryland Resident**

Tuition per credit: \$585 (plus mandatory fees)\*

### **Non-Resident**

Tuition per credit: \$968 (plus mandatory fees)\*

*This program does not offer merit-based financial aid or graduate assistantships of any kind. For more information on tuition and fees, please visit: [www.umbc.edu/sbs](http://www.umbc.edu/sbs).*

*\*For Academic Year 2015/2016*

## Master of Science: ENGINEERING MANAGEMENT (30 Credits)

### Degree Requirements

#### Required Core Management Courses (12 credits)

ENMG 650: Project Management Fundamentals

**OR**

ENMG 668: Project and Systems Engineering Management

ENMG 652: Management, Leadership, and Communication

ENMG 656: Engineering Law and Ethics

ENMG 658: Financial Management

The program requires two (2) additional management electives (6 credits) and four (4) additional technical electives (12 credits). Listed below are some specializations that are possible via appropriate selection of electives:

#### MS EM with Project Management Specialization (18 credits)

ENMG 663: Advanced Project Management Applications

ENMG 661: Leading Virtual/Global Teams

ENMG 672: Decision and Risk Analysis

Three (3) technical courses from Engineering, Computer Science, or IT (9 credits)

#### MS EM with Engineering Organization Leadership Specialization (18 credits)

ENMG 654: Leading Teams and Organizations

ENMG 692: Principles of Organization Learning

ENMG 672: Decision and Risk Analysis

Three (3) technical course from Engineering, Computer Science or IT (9 credits)

#### MS EM with Technology Entrepreneurship Specialization (18 credits)

ENMG 690: Innovation and Technology Entrepreneurship

ENMG 659: Strategic Management

ENMG 672: Decision and Risk Analysis

Three (3) technical course from Engineering, Computer Science or IT (9 credits)

#### MS EM with Systems Engineering Certificate (18 credits)

One (1) management elective (3 credits)

ENMG 660: Systems Engineering Principles

ENEE 661: System Architecture and Design

ENEE 662: System Modeling, Simulation, and Analysis

**OR**

ENMG 672: Decision and Risk Analysis

ENEE 663: System Implementation, Integration, and Test

ENEE 670: Systems Engineering Project

#### MS EM with Cybersecurity Certificate (21 credits)

CYBR 620: Introduction to Cybersecurity

CYBR 621: Cyber Warfare

CYBR 622: Global Cyber Capabilities and Trends

CYBR 623: Cybersecurity Law and Policy

Three (3) technical course from Engineering, Computer Science or IT (9 credits)

### Technical Courses in Computer Science, Engineering and IT

Choose four graduate courses from the following departments:

Chemical/Biochemical Regulatory Engineering, Chemical Engineering, Computer Engineering, Computer Science, Cybersecurity, Electrical Engineering, Environmental Engineering, Health IT, Human Centered Computing, Information Systems, Mechanical Engineering, Systems Engineering

### Post-Baccalaureate Certificate: ENGINEERING MANAGEMENT (12 Credits)

#### Four Required Courses (12 credits)

ENMG 650: Project Management Fundamentals

**OR**

ENMG 668: Project and Systems Engineering Management

ENMG 652: Management, Leadership & Communications

ENMG 656: Engineering Law & Ethics

ENMG 658: Financial Management

### ACCELERATED BACHELOR'S/MASTER'S

The accelerated degree program is designed to let students start taking courses toward a master's degree at UMBC while still an undergraduate. Once admitted to a participating UMBC master's degree program, students can apply up to three graduate-level courses, taken as an undergraduate, towards a master's degree. Learn more:

[umbc.edu/gradschool/gradcatalog/admissions.html](http://umbc.edu/gradschool/gradcatalog/admissions.html)

### FACULTY & CURRICULUM

UMBC's Engineering Management graduate program is led by a distinguished faculty of practitioners in the field.

Learn more at: [www.umbc.edu/engm](http://www.umbc.edu/engm)

### WHY ENGINEERING MANAGEMENT?

- The global environment demands skilled engineers who understand the essential principles of leadership, management, and business.
- Combining technical and business skills gives engineers a competitive advantage.
- Organizations seek engineering experts who can understand the complexity of technological and business-related challenges and create solutions to solve them.

### WHY UMBC?

- 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 six years running (2009-2014), UMBC was ranked #1 in the U.S. News and World Report's list of "national up-and-coming" universities.
- UMBC is classified by the Carnegie Foundation as a Research University (High Research Activity).
- Classes are conveniently offered in the evening on UMBC's campus, located just five minutes from BWI Airport, with easy access to I-95 and the 695 Beltway.

### FOR MORE DETAILS

[umbc.edu/engm](http://umbc.edu/engm)

#### For Program Information:

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#### For Application Information:

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