

# CEC Postgraduate Programs

## Master of Science in Engineering Management (ENGM)

The Master of Science in Engineering Management at the American University of Bahrain (AUBH) is a graduate degree program designed to bridge the gap between engineering and business management. It is structured to expose students to the application of management techniques and theories to engineering processes and practices, with a heavy emphasis on practical, industrial-focused application. The program will enable students to improve their strengths in planning, organization, and administrative abilities to manage complex operational processes better to maximize performance, with the technological skills of problem-solving and efficiency optimization of an engineer to contribute intellectually to the engineering management profession. This ENGM is a Level 9 qualification on Bahrain's National Qualification Framework (NQF) and, therefore, requires significant candidate participation and commitment to achieve the program learning outcomes.

### Program Learning Outcomes (PLOs)

Graduates of the ENGM program are expected to achieve the following knowledge, skills, and professional competencies:

- ✓ Demonstrate critical knowledge and understanding of core and specialized theories and practices in engineering management.
- ✓ Apply core and specialized theories and sustainable practices in engineering management to drive organizational success.
- ✓ Utilize analytical thinking and analysis techniques to effectively manage people, finances, and enterprises as an integrated system.
- ✓ Apply problem-solving and analytical skills to evaluate how products and services can best be designed, configured, and produced.
- ✓ Use a range of standard and specialized analytical tools and information technology applications to analyze and synthesize data in engineering management research projects.
- ✓ Demonstrate a professional level of written and oral communication skills, including the ability to present for a range of audiences with different levels of knowledge or expertise in engineering.
- ✓ Operate at a professional level with substantial responsibility for individual and group work activities on complex and undefined problems in engineering management and develop leadership skills to succeed as a professional engineering manager.
- ✓ Demonstrate a high level of strategic decision-making processes and critically evaluate the impact of engineering practices on people and the environment.

### Program Structure

All students pursuing the Master of Science in Engineering Management must complete a minimum of 33 credits with a cumulative GPA of 3.0 or higher. Specifically, the requirements are as follows:

- Foundation Courses with zero credits towards the degree if applicable
- A minimum of 21 credits of Major Requirements
- A minimum of 6 credits of Major Electives
- A minimum of 6 credits of Master Thesis

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## Curriculum Plan – ENGM

<b>Foundation Courses</b>	<b>Total Credits</b>	<b>0</b>
ENGM 411	Foundation in Research Methods	0
<b>Program Major Requirements</b>	<b>Total Credits</b>	<b>27</b>
ENGM 511	Financial and Cost Accounting	3
ENGM 512	Project Management	3
ENGM 513	Managing People and Organizations	3
ENGM 514	Technology Management	3
MGMT 520	Operations Management for Global Supply Chains	3
ENGM 525	Concept to Commercialization	3
ENGM 535	Analytics for Engineering Managers	3
ENGM 599	Master Thesis	6
<b>Electives Requirements</b>	<b>Total Credits</b>	<b>6</b>
ENGM 528	Engineering and Sustainable Development	3
ENGM 529	Environmental, Social and Governance (ESG)	3
ENGM 532	Product Design and Innovation	3
ENGM 536	Financial Management	3
BUSN 520	Business Data Mining and Predictive Analytics	3
MGMT 530	People Analytics for Leaders	3
MGMT 513	Leadership Development and Team Building	3
<b>Program Total Credits</b>		<b>33</b>

## Proposed Study Plan (ENGM) - AY 2025 - 2026

### First Year

1 <sup>st</sup> Semester				2 <sup>nd</sup> Semester			
Course Code	Course Title	CH	Pre-requisites	Course Code	Course Title	CH	Pre-requisites
ENGM 511	Financial and Cost Accounting	3		ENGM 513	Managing People and Organizations	3	
ENGM 512	Project Management	3		ENGM 535	Analytics for Engineering Managers	3	
TOTAL		6		TOTAL		6	

### Summer Semester

Course Code	Course Title	CH	Pre-requisites
ENGM 514	Technology Management	3	
TOTAL		3	

### Second Year

3 <sup>rd</sup> Semester				4 <sup>th</sup> Semester			
Course Code	Course Title	CH	Pre-requisites	Course Code	Course Title	CH	Pre-requisites
MGMT 520	Operations Management for Global Supply Chains	3		ENGM 599	Master Thesis	6	A minimum of 15 earned credit hours A completed proposal that is approved by the supervisor and the college A minimum CGPA of 2.5.
ENGM 525	Concept to Commercialization	3		XXXX	Elective Course	3	
TOTAL		6		TOTAL		9	

### Summer Semester

Course Code	Course Title	CH	Pre-requisites
XXXX	Elective Course	3	
TOTAL		3	