

## ENGINEERING MANAGEMENT B.S.EM.

Engineering Management is an interdisciplinary degree that combines engineering fundamentals, analysis and design with business administration and resource management. It is the art and science of planning, organizing, directing and controlling activities that have technical components. Graduates work as Project Engineers, Operations Managers, Cost Estimators, and Quality Engineers, to give a few examples.

The curriculum combines a basic education in the engineering disciplines with the study of economics, accounting and finance, operations, and management. The curriculum is offered in cooperation with the Grossman School of Business.

### ENGINEERING MANAGEMENT PROGRAM EDUCATIONAL OBJECTIVES

The educational objectives of the Engineering Management program are to provide our graduates with the disciplinary breadth and depth to:

1. Develop actionable solutions to complex problems by applying critical thinking and engineering, management and mathematics knowledge.
2. Communicate effectively across a variety of mediums and cultures.
3. Grow intellectually through continued self-study, continuing education, and professional development.
4. Uphold responsible ethical and moral standards, and consider the impact of decisions across social, environmental, economic, and technological facets.

### REQUIREMENTS

All students must meet the Degree and University Requirements.

All students must meet the Catamount Core Curriculum Requirements.

All students must meet the College Requirements.

Note that the University's Social Sciences (S1), Natural Sciences (N1, N2), Mathematics (MA), and Quantitative and Data Literacy (QD) requirements are built into the Engineering Management curriculum. Minimum of 128 credits required.

Requirement Description	Credits
GENERAL EDUCATION REQUIREMENTS (21 Credits) <sup>1</sup>	
University WIL1: Writing & Information Literacy	3
University WIL2: Writing & Information Literacy Tier 2 or Oral Communication	3
University AH1/AH2/AH3: Arts and Humanities	6
University D1: Diversity 1	3

University D1/D2: Diversity 1 or Diversity 2		3
University GC1/GC2: Global Citizenship		3
MATHEMATICS & STATISTICS REQUIREMENTS (24 Credits)		
MATH 1234	Calculus I	4
MATH 1248	Calculus II	4
MATH 2248	Calculus III	4
MATH 2522	Applied Linear Algebra	3
or MATH 2544	Linear Algebra	
MATH 3201	Adv Engineering Mathematics	3
STAT 2430	Statistics for Engineering	3
STAT 3240	Stats for Quality&Productvty	3
COMPUTING & SCIENCE REQUIREMENTS (14 Credits)		
CS 1210	Computer Programming I	3
CHEM 1400	General Chemistry 1	4
PHYS 1500	Physics for Engineers I	4
PHYS 1550	Physics for Engineers II	3
ECONOMICS & BUSINESS REQUIREMENTS (24 Credits)		
ECON 1400	Principles of Macroeconomics	3
ECON 1450	Principles of Microeconomics	3
BUS 1610	Financial Accounting	3
BUS 2130	Decision Analysis	3
BUS 2300	Leadership & Org Behavior	3
BUS 2620	Managerial Accounting	3
BUS 2700	Operations Management	3
BUS 2800	Managerial Finance	3
or BUS 2792	Business Process Improvement	
ENGINEERING SCIENCE REQUIREMENTS (37 Credits)		
CEE 1100	Statics	3
CEMS 1500	CEMS First Year Seminar <sup>2</sup>	1
EE 2145	Electrical Engr Concepts	4
or EE 2175	Electrical Circuits & Sensors	
EMGT 2041	Engineering Economics <sup>3</sup>	3
or EMGT 3051	Engineering Project Management	
ENGR 1020	Graphical Communication	2
ME 1210	Thermodynamics	3

Engineering Science Electives <sup>4</sup>		21
ENGINEERING DESIGN REQUIREMENTS (8 Credits) <sup>5</sup>		
CEE 1000	Intro to Civil & Envir Engr <sup>6</sup>	2
or EE 1100	EE Principles and Design	
or ME 1010	First-Year Design Experience	
CEE 2130	System Focused Design Engr <sup>7</sup>	3
or EE 4100	Capstone Design I	
or ME 4010	Capstone Design I	
CEE 4950	Capstone Design	3
or EE 4200	Capstone Design II	
or ME 4020	Capstone Design II	
RECOMMENDED/OPTIONAL COURSES (0-2 Credits)		
PHYS 1510	Physics Problem Solving I	
PHYS 1560	Physics Problem Solving II	
TOTAL		128

- <sup>1</sup> Students who meet the University WIL2, OC or GC requirements with an Engineering Science Elective, may replace these credits with free elective credits to meet minimum degree requirements.
- <sup>2</sup> The First Year Seminar CEMS 1500 is designed for all first-year students in the college. Students entering the college after their first semester should work with their academic advisor to identify an appropriate substitution as approved for their major. The course used to fulfill the CEMS 1500 requirement cannot be used to fulfill another requirement in the major.
- <sup>3</sup> Engineering Economics is recommended for students whose core engineering focus is Electrical or Mechanical Engineering. Engineering Project Management is recommended for students whose core engineering focus is Civil or Environmental Engineering.
- <sup>4</sup> Engineering Science Electives: All BME, CEE, EE, EMGT, ENGR & ME courses (except ENGR 1100). Must include a minimum of 6 EMGT credits.
- <sup>5</sup> Satisfies the CEMS Professional Development Requirement.
- <sup>6</sup> First Year Design courses are degree requirements for first-year students. Internal and external transfer students may substitute 2000-level or higher engineering (BME, CEE, EE, EMGT, ENGR, ME) credits for this requirement.
- <sup>7</sup> For 4000-level Capstone courses, students must choose courses with the same course prefix.