

MECHANICAL ENGINEERING B.S.ME.

The curriculum leading to a degree of Bachelor of Science in Mechanical Engineering offers instruction in design, solid and thermo-fluid mechanics, materials, manufacturing processes and systems, as well as in engineering, life and physical sciences, humanities, and social sciences. Engineering design is developed and integrated into each student’s program and culminates in a required major design experience which draws upon prior course work and which focuses on the issues and expectations of professional practice.

MECHANICAL ENGINEERING PROGRAM EDUCATIONAL OBJECTIVES

The educational objectives of the Mechanical Engineering program are to provide our graduates with disciplinary breadth and depth to fulfill complex professional and societal expectations by:

1. Pursuing careers as practicing engineers or using their program knowledge in a wide range of other professional, educational and service activities.
2. Assuming leadership roles and seeking continuous professional development.
3. Contributing to their profession and society while appreciating the importance of ethical and sustainable solutions that benefit all.

REQUIREMENTS

THE CURRICULUM FOR THE B.S. IN MECHANICAL ENGINEERING

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 Sustainability (SU), Quantitative and Data Literacy (QD), Natural Sciences (both N1 and N2), Global Citizenship (GS), Writing and Information Literacy (WIL2), Mathematics (MA) requirements and the College’s Professional Development requirement are built into the Mechanical Engineering curriculum. Minimum of 128 credits required.

Requirement Description	Credits
GENERAL EDUCATION REQUIREMENTS (21 Credits) ¹	
University WIL1: Writing & Information Literacy	3
University D1: Diversity 1	3
University D1/D2: Diversity 1 or Diversity 2	3
University AH1/AH2/AH3: Arts and Humanities	6
University S1: Social Sciences	6

MATHEMATICS & STATISTICS REQUIREMENTS (21 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
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
MECHANICAL ENGINEERING COURSE REQUIREMENTS (53 Credits)		
ME 1010	First-Year Design Experience ²	2
ME 1020	Engineering Shop Experience ³	1
ME 1120	Dynamics	3
ME 1140	Mechanics of Solids	3
ME 1210	Thermodynamics	3
ME 1220	Applied Thermodynamics	3
ME 1510	Computational Mech Engr Lab ³	1
ME 2110	Materials Engineering	3
ME 2111	Materials and Mechanics Lab ³	2
ME 2120	System Dynamics	3
ME 2230	Fluid Mechanics	3
ME 2231	Thermo-Fluid Lab ³	2
ME 2240	Heat and Mass Transfer	3
ME 2310	Design of Elements	3
ME 4010	Capstone Design I	3
ME 4020	Capstone Design II	3
ME Electives ⁴		12
ADDITIONAL ENGINEERING/TECHNICAL COURSE REQUIREMENTS (19 Credits)		
CEE 1100	Statics	3
EE 2145	Electrical Engr Concepts	4

ENGR 1020	Graphical Communication	2
Embedded Systems ⁵		4
Technical Electives ⁶		6
OPTIONAL/RECOMMENDED COURSES (4 Credits)		
ME 1310	Intro to Robotics and Coding	1
CEMS 1500	CEMS First Year Seminar	1
PHYS 1510	Physics Problem Solving I	1
PHYS 1560	Physics Problem Solving II	1

¹ A single course can satisfy multiple requirements in this category.

² First Year Design Experience: ME 1010 is a degree requirement designed for first-year students. Internal and external transfer students may substitute 2000-level or higher engineering (BME, CEE, CMPE, EE, ENGR, ME) credits for this requirement.

³ Satisfies the CEMS Professional Development Requirement.

⁴ ME Electives: All 3 credit 3000-level ME courses except ME 3994, ME 3995, and ME 3899. All 3 credit 5000-level ME courses.

⁵ Embedded Systems Elective: EE 2845 or Mechatronics.

⁶ Technical Electives: All 2000-level (or higher) courses in BME, CEE, EE, EMGT, ENGR, ME, CS, CSYS, MATH, ASTR, BIOC, BIOL, CHEM, GEOL, MMG & PHYS; STAT 2510 or higher.