

## Mechanical Engineering Major, B.S.M.E.

**Mission:** The mission of the Bachelor of Science in Mechanical Engineering program is to deliver a laboratory-intensive undergraduate mechanical engineering education to provide students with the tools and skills to excel in the engineering profession as they pursue life-long learning and make positive contributions to society. The student learning experience will offer unique opportunities for study abroad, undergraduate research, and electives outside of mechanical engineering to develop an enhanced global perspective.

**Educational Objectives:** The BSME program will produce mechanical engineering graduates who are able to:

1. Solve mechanical engineering problems by applying contemporary engineering tools to propose and implement effective solutions.
2. Design, develop, implement, and improve thermal and mechanical systems.
3. Contribute as informed, ethical, and responsible members of the engineering profession and society as a whole.
4. Continue lifelong professional development throughout their career.
5. Collaborate and communicate effectively with others as a member or leader of an engineering or multidisciplinary team in an international setting.

### Typical Program of Study:

#### *Fall Semester*

##### **First Year**

Comp 1120 College Writing	3 cr
CS programming alternative <sup>a</sup>	3-5 cr
Math 1296 Calculus I*	5 cr
Liberal education course <sup>b</sup>	<u>3 cr</u>
	14-16 cr

##### **Second Year**

Engr 2015 Statics	3 cr
Engr 2110 or ME 2105 Intro to Materials Science	3 cr
Math 3280 Diff Equations/Linear Algebra	4 cr
Phys 2012 General Physics II	4 cr
Liberal education course <sup>b</sup>	<u>3 cr</u>
	17 cr

##### **Third Year**

Comp 3130 Advanced Writing: Engineering or Comp 3150 Advanced Writing: Science or Comp 3180 Advanced Writing: Honors	3 cr
Math 3298 Calculus III	4 cr
IE 3125 Engineering Economic Analysis	3 cr
IE 3135 Materials Processing	4 cr
ME 3111 or ChE 3111 Fluid Mechanics	<u>3 cr</u>
	17 cr

##### **Fourth Year**

ME 4112 Heat and Mass Transfer or ChE 3112 Heat and Mass Transfer	3 cr
ME 4122 Heat, Thermodynamics & Fluids Lab	2 cr
EMgt 4110 Eng. Professionalism and Practice	2 cr
ME 4175 Machine Design	3 cr
Mechanical Engineering elective <sup>c</sup>	<u>3 cr</u>
	13 cr

#### *Spring Semester*

Chem 1151 General Chemistry I	5 cr
Math 1297 Calculus II	5 cr
IE 1225 Intro to Engineering Design, Mfg	4 cr
Phys 2011 General Physics I	<u>4 cr</u>
	18 cr

Econ 1023 Principles of Economics: Micro or Econ 1022 Principles of Economics: Macro	3 cr
Engr 2016 Mechanics of Materials	3 cr
Engr 2026 Dynamics	3 cr
ECE 2006 Electrical Circuit Analysis	4 cr
Stat 3611 Probability & Statistics or Stat 3411 Engineering Statistics	<u>4 cr</u>
	17 cr

IE 3255 Statistical Quality Control	3 cr
ME 3211 ME Thermodynamics	3 cr
ME 4145 CAD/CAM	4 cr
ME 4245 Machining and Machine Tools	4 cr
Liberal education course <sup>b</sup>	<u>3 cr</u>
	17 cr

ME 4255 Multidisciplinary Senior Design	4 cr
Mechanical Engineering elective <sup>c</sup>	3 cr
Control/Systems elective <sup>c</sup>	3-4 cr
Liberal education course <sup>b</sup>	<u>3 cr</u>
	12-13 cr

\*First math course is determined by math placement exam. This schedule presupposes placement into Math 1296.

<sup>a</sup> Course options include CS 1121 Intro. to Programming in Visual BASIC, CS 1131 Intro. to Programming in FORTRAN, CS 1211 Intro to Programming in C, CS 1511 Computer Science I, or CS 2121 Intro to Programming in Java.

<sup>b</sup> In addition to the above courses, students must complete one course each from liberal education categories 7, 8, and 9, and one course from 9 or 10 (12 credits); courses from 9 and 10 must have different course designers.

<sup>c</sup> See IE/ME website for elective options

For further information:

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