

# MECHANICAL ENGINEERING

<b>Fall Quarter</b>	<b>Units</b>	<b>Winter Quarter</b>	<b>Units</b>	<b>Spring Quarter</b>	<b>Units</b>
<b>FIRST YEAR</b>					
ENGL 001A <i>Beginning Composition</i>	4	ENGL 001B <i>Intermediate Composition</i>	4	ENGL 001C or Alternate* <i>Applied Intermediate Composition</i>	4
MATH 009A <i>First Year Calculus</i>	4	MATH 009B <i>First Year Calculus</i>	4	MATH 009C <i>First Year Calculus</i>	4
Breadth _____ <i>Humanities/Social Sciences</i>	4	ME 002 <i>Intro to Mechanical Engineering</i>	4	ME 009 <i>Engineering Graphics &amp; Design</i>	4
		PHYS 040A <i>Physics (Mechanics)</i>	5	PHYS 040B <i>Physics (Heat/Waves/Sound)</i>	5
<b>SECOND YEAR</b>					
CHEM 001A & CHEM 01LA <i>General Chemistry &amp; Lab</i>	5	BIOL 005A & BIOL 05LA <i>Cell &amp; Molecular Biology &amp; Lab</i>	5	EE 001A & EE 01LA <i>Engineering Circuit Analysis I &amp; Lab</i>	4
MATH 046 <i>Differential Equations</i>	4	CHEM 001B & CHEM 01LB <i>General Chemistry &amp; Lab</i>	5	MATH 010B <i>Multivariable Calculus</i>	4
ME 018 <i>Intro to Engineering Computations</i>	3	MATH 010A <i>Multivariable Calculus</i>	4	STAT 100A <i>Introduction to Statistics</i>	5
PHYS 040C <i>Physics (Electricity/Magnetism)</i>	5	ME 010 <i>Statics</i>	4	Breadth _____ <i>Humanities/Social Sciences</i>	4
<b>THIRD YEAR</b>					
ME 100A <i>Thermodynamics</i>	4	ME 110 <i>Mechanics of Materials</i>	4	ME 116A <i>Heat Transfer</i>	4
ME 103 <i>Dynamics</i>	4	ME 113 <i>Fluid Mechanics</i>	4	ME 170A <i>Experimental Techniques</i>	4
ME 114 <i>Intro to Materials Science &amp; Engr.</i>	4	ME 118 <i>Mechanical Engr. Modeling &amp; Analysis</i>	4	ME 174 <i>Machine Design</i>	4
Breadth _____ <i>Humanities/Social Sciences</i>	4	ME 120 <i>Linear Systems and Control</i>	4		
<b>FOURTH YEAR</b>					
ME 135 or ME175B <sup>2</sup> <i>Transport Phenomena</i>	4	ME 175B or 175C <i>Mechanical Engineering Design</i>	3	ME 175C or ME135 <sup>2</sup> <i>Mechanical Engineering Design</i>	3
ME 170B <i>Experimental Techniques</i>	4	Technical Elective** _____	4	Technical Elective** _____	4
ME 175A <sup>3</sup> <i>Professional Topics</i>	2	Technical Elective** _____	4	Technical Elective** _____	4
Breadth _____ <i>Humanities/Social Sciences</i>	4	Breadth _____ <i>Humanities/Social Sciences</i>	4	Breadth _____ <i>Humanities/Social Sciences</i>	4

To earn a B.S., you must complete all College and University requirements. For a full list of requirements, go to [www.catalog.ucr.edu](http://www.catalog.ucr.edu).

### ENGLISH COMPOSITION\*

A C or better is required in all English Composition courses to satisfy the graduation requirement. Please consult with your Academic Advisor for ENGL 1C alternatives.

### BREADTH REQUIREMENTS

For an approved list of Breadth courses, go to <http://student.engr.ucr.edu/policies/requirements/breadth.html>.

Humanities: (3 courses)

- A. World History: \_\_\_\_\_
- B. Fine Arts, Lit., Phil. or Rlst: \_\_\_\_\_
- C. Human Persp. on Science: \_\_\_\_\_

Social Sciences: (3 courses)

- A. Econ. or Posc.: \_\_\_\_\_
- B. Anth., Psyc, or Soc.: \_\_\_\_\_
- C. General Social Science: \_\_\_\_\_

Ethnicity: (1 course)

- 1. \_\_\_\_\_

Upper Division: (2 courses)

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_

### TECHNICAL ELECTIVES \*\*

Please note that Technical Electives may be offered throughout the Academic Year. Consult with your Academic Advisor about potential offerings. See approved technical electives on back.

Course Plan is subject to change.

<sup>2</sup> You must take ME175B if not enrolled in ME135 and/or ME170B

<sup>3</sup> May be taken concurrently with ME175B

# Mechanical Engineering Technical Electives and Focus Areas

You must complete 4 courses (at least 16 units) of Technical Elective coursework from one Focus Area.

Units are listed in () Select from the list below:

## General Mechanical Engineering

ME 100B:	Thermodynamics (4)
ME 116B:	Heat Transfer (4)
ME 117:	Combustion & Energy Systems (4)
ME 121:	Feedback Control (4)
ME 122:	Vibrations (4)
ME 130:	Kinematic and Dynamic Analysis of Mechanisms (4)
ME 131:	Design of Mechanisms (4)
ME 133:	Introduction to Mechatronics (4)
ME 136:	Envir. Impacts of Energy Prod. & Conversion (4)
ME 137:	Environmental Fluid Mechanics (4)
ME 138:	Transport Phenomena in Living Systems (4)
ME 140:	Ship Theory (4)
ME 145:	Robotics Planning and Kinematics (4)
ME 153:	Finite Element Methods (4)
ME 156:	Mechanical Behavior of Materials (4)
ME 175D:	Technological Entrepreneurship (4)
ME 176	Sustainable Product Design (4)
ME 180:	Optics and Lasers in Engineering (4)
*ME 197:	Research for Undergraduates

## Materials and Structures

ME 100B:	Thermodynamics (4)
ME 116B	Heat Transfer (4)
ME 121:	Feedback Control (4)
ME 122	Vibrations (4)
ME 153:	Finite Element Methods (4)
ME 156:	Mechanical Behavior of Materials (4)
ME 180:	Optics and Lasers in Engineering (4)
*ME 197:	Research for Undergraduates

## Energy and Environment

ME 100B:	Thermodynamics (4)
ME 116B:	Heat Transfer (4)
ME 117:	Combustion & Energy Systems (4)
ME 136:	Envir. Impacts of Energy Prod. & Conversion (4)
ME 137:	Environmental Fluid Mechanics (4)
ME 138:	Transport Phenomena in Living Systems (4)
*ME 197:	Research for Undergraduates

## Design and Manufacturing

ME 121:	Feedback Control (4)
ME 122:	Vibrations (4)
ME 130:	Kinematic and Dynamic Analysis of Mechanisms (4)
ME 131:	Design of Mechanisms (4)
ME 133:	Introduction to Mechatronics (4)
ME 140:	Ship Theory (4)
ME 145:	Robotics Planning and Kinematics (4)
ME 153:	Finite Element Methods (4)
ME 156:	Mechanical Behavior of Materials (4)
ME 175D:	Technological Entrepreneurship (4)
ME 176	Sustainable Product Design(4)
ME 180:	Optics and Lasers in Engineering (4)
*ME 197:	Research for Undergraduates

\*To enroll in and earn Technical Elective credit for ME 197, students must complete a project abstract using a standard template. The abstract must be signed by the project faculty advisor and submitted to the Undergraduate Program Committee chair at least one week prior to the start of the quarter of enrollment. A final project report is required. For format details, please go to: <http://www.me.ucr.edu/undergrad/opportunities.html>.