

# MECHANICAL ENGINEERING

<i>Fall Quarter</i>	<i>Units</i>	<i>Winter Quarter</i>	<i>Units</i>	<i>Spring Quarter</i>	<i>Units</i>
<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
ME 009 <i>Engineering Graphics &amp; Design</i>	4	ME 018A <i>Intro to Engineering Computation</i>	4	ME 002 <i>Intro to Mechanical Engineering</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	CHEM 001B & CHEM 01LB <i>General Chemistry &amp; Lab</i>	5	ME 010 <i>Statics</i>	4
MATH 046 <i>Differential Equations</i>	4	MATH 010A <i>Multivariable Calculus</i>	4	MATH 010B <i>Multivariable Calculus</i>	4
PHYS 040C <i>Physics (Electricity/Magnetism)</i>	5	ME 018B <i>Intro Engr. Comp. Modeling</i>	4	STAT 010 <i>Introduction to Statistics</i>	5
Breadth _____ <i>Humanities/Social Sciences</i>	4	EE 005 <i>Circuits and Electronics</i>	4	Breadth _____ <i>Biological Science</i>	4
<b>THIRD YEAR</b>					
ME 100A <i>Thermodynamics</i>	4	ME 103 <i>Dynamics</i>	4	ME 116A <i>Heat Transfer</i>	4
ME 110 <i>Mechanics of Materials</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
ME 120 <i>Linear Systems and Control</i>	4	Breadth _____ <i>Humanities/Social Sciences</i>	4	Breadth _____ <i>Humanities/Social Sciences</i>	4
<b>FOURTH YEAR</b>					
ME 135 <i>Transport Phenomena</i>	4	ME 175B or 175C <i>Mechanical Engineering Design</i>	3	ME 175C <i>Mechanical Engineering Design</i>	3
ME 170B <i>Experimental Techniques</i>	4	Technical Elective**	4	Technical Elective**	4
ME 175A <i>Professional Topics</i>	2	Technical Elective**	4	Technical Elective**	4
Breadth or ME 175B <sup>1</sup> <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, refer 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>1</sup> May be attempted concurrently with ME 175A

# Mechanical Engineering Technical Electives and Focus Areas

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

## 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 134:	Microstructural Transformations in Materials (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 144:	Introduction to Robotics (4)
ME 145:	Robotics Planning and Kinematics (4)
ME 153:	Finite Element Methods (4)
ME 156:	Mechanical Behavior of Materials (4)
ME 157:	Failure Analysis and Prevention (4)
ME 158:	Advanced Solidification Processing (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

## 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

## Materials and Structures

ME 100B:	Thermodynamics (4)
ME 116B:	Heat Transfer (4)
ME 121:	Feedback Control (4)
ME 122:	Vibrations (4)
ME 134:	Microstructural Transformations in Materials (4)
ME 153:	Finite Element Methods (4)
ME 156:	Mechanical Behavior of Materials (4)
ME 157:	Failure Analysis and Prevention (4)
ME 158:	Advanced Solidification Processing (4)
ME 180:	Optics and Lasers in Engineering (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 144:	Introduction to Robotics (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>.