

MATERIALS SCIENCE & ENGINEERING

<i>Fall Quarter</i>	<i>Units</i>	<i>Winter Quarter</i>	<i>Units</i>	<i>Spring Quarter</i>	<i>Units</i>
FIRST YEAR					
CHEM 001A & CHEM 01LA <i>General Chemistry & Lab</i>	5	CHEM 001B & CHEM 01LB <i>General Chemistry & Lab</i>	5	CHEM 001C & CHEM 01LC <i>General Chemistry & Lab</i>	5
ENGL 001A <i>Beginning Composition</i>	4	ENGL 001B <i>Intermediate Composition</i>	4	MATH 009C <i>First Year Calculus</i>	4
MATH 009A <i>First Year Calculus</i>	4	MATH 009B <i>First Year Calculus</i>	4	Breadth _____ <i>Humanities/Social Sciences</i>	4
MSE 001 <i>Fund. of Materials Science & Engr.</i>	2	Breadth _____ <i>Biological Sci (BIOL 002, or 003, or 005A/LA)</i>	4		
SECOND YEAR					
CHEM 008A & CHEM 08LA <i>Organic Chemistry</i>	4	MATH 010A <i>Multivariable Calculus</i>	4	CS 009M or 009P <i>Intro to Programming</i>	4
MATH 046 <i>Differential Equations</i>	4	ME 010 <i>Statics</i>	4	EE 001A & EE 01LA <i>Engineering Circuit Analysis I & Lab</i>	4
PHYS 040A <i>Physics (Mechanics)</i>	5	PHYS 040B <i>Physics (Heat/Waves/Sound)</i>	5	MATH 010B <i>Multivariable Calculus</i>	4
				PHYS 040C <i>Physics (Electricity/Magnetism)</i>	5
THIRD YEAR					
EE 138 <i>Electrical Properties of Materials</i>	4	BIEN 140A/CEE 140A <i>Biomaterials</i>	4	ENGR 180W* <i>Technical Communications</i>	4
ME 114 <i>Intro to Materials Science & Engr</i>	4	CHE 100 <i>Engineering Thermodynamics</i>	4	MSE 135 <i>Intro to Inorganic Mat Synthesis</i>	4
STAT 155 <i>Probability & Statistics for Engr</i>	4	ME 110 <i>Mechanics of Materials</i>	4	MSE 160 <i>Nanostructure Characterization Lab</i>	4
Breadth _____ <i>Humanities/Social Sciences</i>	4	MSE 134 <i>Microstruct Transform in Materials</i>	4	Technical Elective** _____	4
FOURTH YEAR					
ME 156 <i>Mechanical Behavior of Materials</i>	4	MSE 175A <i>Senior Design Project</i>	4	MSE 175B <i>Senior Design Project</i>	4
MSE 161 <i>Analytical Materials Characterization</i>	4	Technical Elective** _____	4	Technical Elective** _____	4
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	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 catalog.ucr.edu.

ENGLISH COMPOSITION*

A C or better is required in all English Composition courses to satisfy the graduation requirement. ENGR 180W fulfills the third quarter of English Composition.

BREADTH REQUIREMENTS

For an approved list of Breadth courses: <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: _____

Biological 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.

Materials Science & Engineering Technical Electives & Focus Areas

You must complete 5 courses (at least 20 units) of Technical Elective coursework, selected from the courses below. It is recommended that you select at least 4 courses within one of the Focus Areas below. Units are listed in ().

Polymers and Biomaterials

BIEN 110	Biomechanics of the Human Body (4)
BIEN/MSE 136	Tissue Engineering (4)
BIEN 137	Advanced Biomechanics (4)
BIEN 140B	Biomaterials (4)
CHE 105	Introduction to Nanoscale Engineering (4)
MSE 197	Research for Undergraduates (1-4)

Synthesis and Processing of Nanomaterials

CHE 105	Introduction to Nanoscale Engineering (4)
CEE 147	Bio-microelectromechanical Systems (4)
CHE 161	Nanotechnology Processing Laboratory (3)
EE 133	Solid-State Electronics (4)
EE 136	Semiconductor Device Processing (4)
EE 162	Introduction to Nanoelectronics (4)
MSE 197	Research for Undergraduates (1-4)

Computation and Modeling of Materials

ME 153	Finite Element Methods (4)
MSE 155	Materials Science of the Solid State (4)
MSE 156	Atomistic Modeling of Materials (4)
MSE 197	Research for Undergraduates (1-4)

Electronic, Photonic, and Magnetic Materials

EE 133	Solid-State Electronics (4)
EE 136	Semiconductor Device Processing (4)
EE 137	Intro to Semiconductor Optoelectronic Devices (4)
EE 139	Magnetic Materials (4)
EE 162	Introduction to Nanoelectronics (4)
MSE 155	Materials Science of the Solid State (4)
MSE 197	Research for Undergraduates (1-4)

Structural Materials

ME 153	Finite Element Methods (4)
MSE 142	Corrosion Science (4)
MSE 143	Failure Analysis and Prevention (4)
MSE 148	Advanced Solidification Processing (4)
MSE 197	Research for Undergraduates (1-4)

* Note that many Technical Electives will require that you complete additional courses as pre-requisites not accounted for in the undergraduate program. Consult the Faculty Advisor regarding the pre-requisite coursework for the Technical Electives you would like to take.