# Suggested Course Plan for a UC Riverside Major in Materials Science & Engineering

**Fall Quarter**
- **CHEM 001A & CHEM 01LA** 5
- General Chemistry & Lab
- **ENGL 001A** 4
- Beginning Composition
- **MATH 009A** 4
- First Year Calculus

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**Winter Quarter**
- **CHEM 001B & CHEM 01LB** 5
- General Chemistry & Lab
- **ENGL 001B** 4
- Intermediate Composition
- **MATH 009B** 4
- First Year Calculus

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**Spring Quarter**
- **CHEM 001C & CHEM 01LC** 5
- General Chemistry & Lab
- **MATH 009C** 4
- First Year Calculus

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**Second Year**
- **CHEM 112A** 4
- Organic Chemistry
- **MATH 046** 4
- Differential Equations
- **PHYS 040A** 5
- Physics (Mechanics)

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**Third Year**
- **CEE 135** 4
- Chemistry of Materials
- **EE 138** 4
- Electrical Properties of Materials
- **ME 114** 4
- Intro to Materials Science & Engr

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**Fourth Year**
- **ME 156** 4
- Mechanical Behavior of Materials
- **MSE 161** 4
- Analytical Materials Characterization
- **STAT 155** 4
- Probability & Statistics for Engr

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**Total Units:** 180

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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.

**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:

**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.

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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 ()..

<table>
<thead>
<tr>
<th>Polymers and Biomaterials (BIEN)</th>
<th>Electronic and Magnetic Materials (EE)</th>
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<tbody>
<tr>
<td>BIEN/MSE 136: Tissue Engineering</td>
<td>EE 133: Solid-State Electronics (4)</td>
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<tr>
<td>BIEN 140B: Biomaterials (4)</td>
<td>EE 136: Semiconductor Device Processing (4)</td>
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<tr>
<td>CHE 105: Introduction to Nanoscale Engineering (4)</td>
<td>EE 137: Intro to Semiconductor Optoelectronic Devices (4)</td>
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<tr>
<td>EE 139: Magnetic Materials (4)</td>
<td>EE 139: Magnetic Materials (4)</td>
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<td>EE 162: Introduction to Nanoelectronics (4)</td>
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<tr>
<th>Nanomaterials and Sensors (CEE)</th>
<th>Structural Materials (ME)</th>
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<tbody>
<tr>
<td>CHE 105: Introduction to Nanoscale Engineering (4)</td>
<td>ME 103: Dynamics (4)</td>
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<tr>
<td>CHE 161: Nanotechnology Processing Laboratory (3)</td>
<td>ME 116B: Heat Transfer (4)</td>
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<tr>
<td>EE 133: Solid-State Electronics (4)</td>
<td>ME 122: Vibrations (4)</td>
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<tr>
<td>EE 139: Magnetic Materials (4)</td>
<td>ME 138: Transport Phenomena in Living Systems (4)</td>
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<tr>
<td>EE 162: Introduction to Nanoelectronics (4)</td>
<td>ME 153: Applied Finite Element Methods (4)</td>
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<td>ME 180: Optics and Lasers in Engineering (4)</td>
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<thead>
<tr>
<th>Computation and Modeling (CSE)</th>
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<tbody>
<tr>
<td>MATH 131: Linear Algebra I</td>
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<tr>
<td>MATH 135A: Numerical Analysis (4)</td>
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<tr>
<td>MATH 135B: Numerical Analysis (4)</td>
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<tr>
<td>CS 160: Concurrent Programming and Parallel Systems (4)</td>
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* 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.