# The UCLA Chemistry-Materials Science Major 2007 - 2008

The Department of Chemistry and Biochemistry offers four undergraduate majors, two concentrations, and one specialization: the **Chemistry** major, the **Physical Chemistry** concentration, the **Biochemistry** major, the **General Chemistry** major (for students who want to acquire a good chemical background in preparation for careers outside chemistry), the **Chemistry-Materials Science** major (listed here), the **Chemistry-Materials Science Organic** concentration, and the **Computing Specialization**. For more details about these majors, consult your faculty advisor or the Undergraduate Office in 4009 Young Hall.

## The Chemistry-Materials Science Major:

The major is designed primarily for students who are interested in chemistry with an emphasis on material properties. The major provides appropriate preparation for graduate studies in fields emphasizing interdisciplinary research involving chemistry, engineering, and applied science. Refer to the UCLA General Catalog for course descriptions.

### Preparation for the Major

<table>
<thead>
<tr>
<th>General Chemistry:</th>
<th>Chem 20A(H), 20B(H), 20L, 30AL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic Chemistry:</td>
<td>Chem 30A(H)</td>
</tr>
<tr>
<td>Math:</td>
<td>31A, 31B, 32A, 32B, 33B</td>
</tr>
<tr>
<td>Physics:</td>
<td>1A(H), 1B(H), 1C(H), 4BL</td>
</tr>
</tbody>
</table>

Note: (H) indicates that an HONORS section is available

### Upper Division Major Requirements

<table>
<thead>
<tr>
<th>Chemistry</th>
<th>Chem 110A, 113A, 171, C185, [C172 or C180 or C181]</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Units from Chemistry:</td>
<td>110B, 113B, C172*, C174, C175, C176, C180*, C181*</td>
</tr>
<tr>
<td>Materials Science &amp; Engineering:</td>
<td>104, 110, 110L, 120, 131, [121 or 150 or 160]</td>
</tr>
<tr>
<td>8 Units from Materials Science &amp; Engineering:</td>
<td>111, 121*, 122, 132, 150*, 160*, 162, CM180</td>
</tr>
<tr>
<td>7 Laboratory Units from:</td>
<td>Chem 114, 184, Materials Science &amp; Engineering 121L, 131L, 161L</td>
</tr>
</tbody>
</table>

*course may only be applied once to the major  [ ] pick one course enclosed in brackets

### Important Notes

- You may not take or repeat a chemistry or biochemistry course for credit if it is a prerequisite for a more advanced course for which you already have credit.
- Seminars, individual study courses, and research courses (e.g. 196, 199) **may not be used** to satisfy the requirements for the Chemistry Materials Science major.
- You must maintain at least a 2.0 GPA in all upper division coursework taken to fulfill the major requirements.
- All prep for major and major courses must be taken for a letter grade.

### Schedule:

The following schedule for the first six quarters is strongly recommended for students planning to major in Chemistry-Materials Science:

<table>
<thead>
<tr>
<th>COURSES</th>
<th>QUARTER</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td></td>
<td>20A</td>
<td>20B &amp; 20L</td>
<td>30A &amp; 30AL</td>
<td>171</td>
<td>110A or 172</td>
<td></td>
</tr>
<tr>
<td>Mat. Science</td>
<td></td>
<td>104</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td></td>
<td>31A</td>
<td>31B</td>
<td>32A</td>
<td>32B</td>
<td>33B</td>
<td></td>
</tr>
<tr>
<td>Physics</td>
<td></td>
<td>1A</td>
<td>1B</td>
<td>1C</td>
<td>4BL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
COLLEGE REQUIREMENTS FOR THE B.S. DEGREE: Requirements for the B.S. degree established by the College of Letters and Science are listed in the UCLA General Catalog. A total of 180 quarter units are required for the degree, 60 of these 180 units must be upper division (course numbers 100-199).

UPPER DIVISION COURSES: The program of upper division courses for the Chemistry-Materials Science major should be planned with care. Particular attention should be paid to prerequisites for advanced courses. Please consult with the Undergraduate Office in 4009 Young Hall if you have questions about course planning.

<table>
<thead>
<tr>
<th>COURSE</th>
<th>PREREQUISITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required:</td>
<td>Chemistry</td>
</tr>
<tr>
<td>110A</td>
<td>Chem 20B; Math 32A or 3C; Physics 1A(H), 1B(H), 1C(H)<em>, or Physics 6A(H), 6B(H), 6C(H)</em></td>
</tr>
<tr>
<td>110B</td>
<td>Chem 110A, 113A; Math 32B</td>
</tr>
<tr>
<td>113A</td>
<td>Chem 20B; Math 32A, 32B 33B; Physics 6A, 6B, 6C or 1A, 1B, 1C</td>
</tr>
<tr>
<td>113B</td>
<td>Chem 113A</td>
</tr>
<tr>
<td>114</td>
<td>Chem 30AL, 110A, 113A and EITHER 110B* or C113B*</td>
</tr>
<tr>
<td>171</td>
<td>Chem 30B</td>
</tr>
<tr>
<td>C172</td>
<td>Chem 171</td>
</tr>
<tr>
<td>C174</td>
<td>Chem 30CL, C172</td>
</tr>
<tr>
<td>C175</td>
<td>Chem 110AB, 113A, C172</td>
</tr>
<tr>
<td>C176</td>
<td>Chem 113A, C172</td>
</tr>
<tr>
<td>C180</td>
<td>Chem C172</td>
</tr>
<tr>
<td>C181</td>
<td>Chem 30B, 110A</td>
</tr>
<tr>
<td>184</td>
<td>Chem 30CL, 110A</td>
</tr>
<tr>
<td>C185</td>
<td>Chem 30AL, 110A, 113A, 171</td>
</tr>
<tr>
<td>Material Science &amp; Engineering</td>
<td></td>
</tr>
<tr>
<td>104</td>
<td>Chem 20A, 20B, 20L, Physics 1A, 1B</td>
</tr>
<tr>
<td>110</td>
<td>Mat-Sci and Eng 104</td>
</tr>
<tr>
<td>110L</td>
<td>Mat-Sci and Eng 104</td>
</tr>
<tr>
<td>111</td>
<td>Mat-Sci and Eng 104, 110</td>
</tr>
<tr>
<td>120</td>
<td>Mat-Sci and Eng 104, 110 (or Chem 113A)</td>
</tr>
<tr>
<td>121</td>
<td>Mat-Sci and Eng 120</td>
</tr>
<tr>
<td>121L</td>
<td>Mat Sci 121 (co-requisite)</td>
</tr>
<tr>
<td>122</td>
<td>Mat-Sci and Eng 104</td>
</tr>
<tr>
<td>131</td>
<td>Mat-Sci and Eng 130</td>
</tr>
<tr>
<td>131L</td>
<td>Mat-Sci and Eng 131</td>
</tr>
<tr>
<td>132</td>
<td>Mat-Sci and Eng 131</td>
</tr>
<tr>
<td>150</td>
<td>No prerequisites required</td>
</tr>
<tr>
<td>160</td>
<td>Mat-Sci and Eng 104, 130</td>
</tr>
<tr>
<td>161L</td>
<td>Mat-Sci and Eng 160 (161 is a recommended co-requisite)</td>
</tr>
<tr>
<td>162</td>
<td>Mat-Sci and Eng 104 Electrical Eng 100</td>
</tr>
<tr>
<td>CM180</td>
<td>Mat-Sci and Eng 104 or Chem 20A, 20B, 20L</td>
</tr>
</tbody>
</table>

* indicates may be taken concurrently with the course