BS in Chemistry

Program Codes:
20FT0335BS

Degree Requirements
To earn a Bachelor of Science in Chemistry degree from UIC, students need to complete university, college, and department degree requirements. The Department of Chemistry degree requirements are outlined below. Students should consult the College of Liberal Arts and Sciences section for additional degree requirements and college academic policies.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 160</td>
<td>Academic Writing I: Writing in Academic and Public Contexts</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 161</td>
<td>Academic Writing II: Writing for Inquiry and Research</td>
<td>3</td>
</tr>
<tr>
<td>Foreign language (the equivalent of two years of a single language at the college level)</td>
<td>0-16</td>
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<tr>
<td>Exploring World Cultures course a</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Understanding the Creative Arts course a</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Understanding the Individual and Society course a</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Understanding the Past course a</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Understanding U.S. Society course a</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH 180</td>
<td>Calculus I b,c</td>
<td>4</td>
</tr>
<tr>
<td>MATH 181</td>
<td>Calculus II c</td>
<td>4</td>
</tr>
<tr>
<td>MATH 210</td>
<td>Calculus III c</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 141</td>
<td>General Physics I (Mechanics) c</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 142</td>
<td>General Physics II (Electricity and Magnetism) c</td>
<td>4</td>
</tr>
</tbody>
</table>

Select one of the following sequences in general and analytical chemistry:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 116</td>
<td>Honors and Majors General and Analytical Chemistry I c,d</td>
<td>10-14</td>
</tr>
<tr>
<td>CHEM 118</td>
<td>Honors and Majors General and Analytical Chemistry II c,d</td>
<td></td>
</tr>
</tbody>
</table>

OR

| Code | Title | |
|------|-------||
| CHEM 122 | General Chemistry I Lecture b | |
| CHEM 123 | General Chemistry Laboratory I c,e | |
| CHEM 124 | General Chemistry II Lecture e | |
| CHEM 125 | General Chemistry Laboratory II c,e | |
| CHEM 222 | Analytical Chemistry | |

Summary of Requirements
Requirements for the Curriculum

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 222</td>
<td>Organic Chemistry I</td>
<td></td>
</tr>
<tr>
<td>CHEM 233</td>
<td>Organic Chemistry Laboratory I</td>
<td></td>
</tr>
<tr>
<td>CHEM 234</td>
<td>Organic Chemistry II</td>
<td></td>
</tr>
<tr>
<td>CHEM 314</td>
<td>Inorganic Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 333</td>
<td>Advanced Synthetic Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 342</td>
<td>Physical Chemistry I</td>
<td></td>
</tr>
<tr>
<td>CHEM 343</td>
<td>Physical Chemistry Laboratory f</td>
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</tr>
<tr>
<td>CHEM 346</td>
<td>Physical Chemistry II</td>
<td></td>
</tr>
<tr>
<td>CHEM 402</td>
<td>Chemical Information Systems</td>
<td></td>
</tr>
<tr>
<td>CHEM 421</td>
<td>Instrumental Analysis</td>
<td></td>
</tr>
<tr>
<td>CHEM 452</td>
<td>Biochemistry I</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following advanced lecture courses:

- CHEM 414 Advanced Inorganic Chemistry
- CHEM 432 Advanced Organic Chemistry
- CHEM 444 Spectroscopy in Chemistry and Biochemistry

Select one of the following advanced laboratory courses:

- CHEM 415 Inorganic Chemistry Laboratory
- CHEM 455 Biochemistry Laboratory
- CHEM 499 Supervised Research

Electives at the 300-level or above in the natural sciences or mathematics, as approved by the departmental advisor

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</thead>
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<tr>
<td>ENGL 161</td>
<td>Academic Writing I: Writing in Academic and Public Contexts</td>
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</tr>
<tr>
<td>MATH 180</td>
<td>Calculus I b,c</td>
<td>4</td>
</tr>
<tr>
<td>MATH 181</td>
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<td>4</td>
</tr>
<tr>
<td>MATH 210</td>
<td>Calculus III c</td>
<td>3</td>
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<tr>
<td>PHYS 141</td>
<td>General Physics I (Mechanics) c</td>
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<td>PHYS 142</td>
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<td>4</td>
</tr>
</tbody>
</table>

Select one of the following sequences in general and analytical chemistry:

| Code | Title | |
|------|-------||
| CHEM 116 | Honors and Majors General and Analytical Chemistry I c,d | |
| CHEM 118 | Honors and Majors General and Analytical Chemistry II c,d | |

Recommended Plan of Study
Chemistry is a highly structured discipline. Because most advanced courses require physical chemistry as a prerequisite, which in turn requires prerequisites of general chemistry, physics, and mathematics, careful course planning is essential. It is best to start with mathematics and general chemistry in the first year, followed by organic chemistry and physics in the second year, and physical chemistry in the third year. Consult the Biochemistry section for more information on the BS in Biochemistry.

Note: Students who are not ready to start with MATH 180 and CHEM 122/CHEM 123 should expect to take summer session courses and/or take longer than four years to graduate.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Semester</td>
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<tr>
<td>ENGL 160</td>
<td>Academic Writing I: Writing in Academic and Public Contexts</td>
<td>3</td>
</tr>
<tr>
<td>MATH 180</td>
<td>Calculus I</td>
<td>4</td>
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Select one of the following:
<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>CHEM 116</td>
<td>Honors and Majors General and Analytical Chemistry I&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>CHEM 122 &amp; CHEM 123</td>
<td>General Chemistry I Lecture and General Chemistry Laboratory I</td>
</tr>
<tr>
<td></td>
<td>General Education Requirement course 3</td>
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<tr>
<td></td>
<td>Hours 15</td>
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<tr>
<td><strong>Spring Semester</strong></td>
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<tr>
<td>ENGL 161</td>
<td>Academic Writing II: Writing for Inquiry and Research 3</td>
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<tr>
<td>MATH 181</td>
<td>Calculus II 4</td>
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<td>Select one of the following: 5</td>
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<tr>
<td>CHEM 118</td>
<td>Honors and Majors General and Analytical Chemistry II&lt;sup&gt;b&lt;/sup&gt;</td>
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<tr>
<td>CHEM 124 &amp; CHEM 125</td>
<td>General Chemistry II Lecture and General Chemistry Laboratory II</td>
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<td>General Education Requirement course 3</td>
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<td></td>
<td>Hours 15</td>
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<tr>
<td><strong>Second Year</strong></td>
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<td><strong>Fall Semester</strong></td>
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<tr>
<td>CHEM 222</td>
<td>Analytical Chemistry (or Electives)&lt;sup&gt;c&lt;/sup&gt; 4</td>
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<tr>
<td>CHEM 232</td>
<td>Organic Chemistry I 4</td>
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<tr>
<td>CHEM 233</td>
<td>Organic Chemistry Laboratory I 2</td>
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<tr>
<td>PHYS 141</td>
<td>General Physics I (Mechanics) 4</td>
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<td></td>
<td>Hours 14</td>
</tr>
<tr>
<td><strong>Spring Semester</strong></td>
<td></td>
</tr>
<tr>
<td>CHEM 234</td>
<td>Organic Chemistry II 4</td>
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<tr>
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<td>Advanced Synthetic Laboratory 3</td>
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<td>General Physics II (Electricity and Magnetism) 4</td>
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<td></td>
<td>Foreign Language 4</td>
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<tr>
<td></td>
<td>Hours 15</td>
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<tr>
<td><strong>Third Year</strong></td>
<td></td>
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<td><strong>Fall Semester</strong></td>
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<tr>
<td>CHEM 314</td>
<td>Inorganic Chemistry 4</td>
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<tr>
<td>CHEM 342</td>
<td>Physical Chemistry I&lt;sup&gt;b&lt;/sup&gt; 3</td>
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<tr>
<td>MATH 210</td>
<td>Calculus III 3</td>
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<td>Foreign Language 4</td>
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<td></td>
<td>General Education Requirement course 3</td>
</tr>
<tr>
<td></td>
<td>Hours 17</td>
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<td><strong>Spring Semester</strong></td>
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<tr>
<td>CHEM 346</td>
<td>Physical Chemistry II&lt;sup&gt;b&lt;/sup&gt; 3</td>
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<td>CHEM 452</td>
<td>Biochemistry I 4</td>
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<tr>
<td></td>
<td>General Education Requirement course 3</td>
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<td></td>
<td>Foreign Language 4</td>
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<tr>
<td></td>
<td>Electives 3</td>
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<td></td>
<td>Hours 17</td>
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<tr>
<td><strong>Fourth Year</strong></td>
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<tr>
<td><strong>Fall Semester</strong></td>
<td></td>
</tr>
<tr>
<td>CHEM 343</td>
<td>Physical Chemistry Laboratory&lt;sup&gt;d&lt;/sup&gt; 3</td>
</tr>
<tr>
<td>CHEM 402</td>
<td>Chemical Information Systems 2</td>
</tr>
</tbody>
</table>

—a CHEM 116 and CHEM 342 are offered fall semester only.
—b CHEM 118 and CHEM 346 are offered spring semester only.
—c Students who take CHEM 116 and CHEM 118 to fulfill the general chemistry requirement do not need to take CHEM 222.
—d CHEM 343 fulfills the LAS Writing-in-the-Discipline requirement.