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.

Summary of Requirements
Requirements for the Curriculum 120
Total Hours 120

Requirements for the Curriculum
The requirements for the curriculum include the courses necessary to complete the General Education and Writing-in-the-Discipline requirements described in the College of Liberal Arts and Sciences section.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td></td>
<td>Required Courses</td>
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<tr>
<td>ENGL 160</td>
<td>Academic Writing I: Writing in Academic and Public Contexts</td>
<td>3</td>
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<tr>
<td>ENGL 161</td>
<td>Academic Writing II: Writing for Inquiry and Research</td>
<td>3</td>
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<td></td>
<td>Foreign language (the equivalent of two years of a single language at the college level)</td>
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<td></td>
<td>Exploring World Cultures course a</td>
<td>3</td>
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<td></td>
<td>Understanding the Creative Arts course a</td>
<td>3</td>
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<td></td>
<td>Understanding the Individual and Society course a</td>
<td>3</td>
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<td></td>
<td>Understanding the Past course a</td>
<td>3</td>
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<td></td>
<td>Understanding U.S. Society course a</td>
<td>3</td>
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<tr>
<td>MATH 180</td>
<td>Calculus I b.c</td>
<td>4</td>
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<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>
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<tr>
<td>PHYS 142</td>
<td>General Physics II (Electricity and Magnetism) c</td>
<td>4</td>
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<td>Select one of the following laboratory courses:</td>
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<td></td>
<td>CHEM 116 Honors and Majors General and Analytical Chemistry I c.d</td>
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<td>CHEM 118 Honors and Majors General and Analytical Chemistry II c.d</td>
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<td>OR</td>
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<td></td>
<td>CHEM 122 General Chemistry I Lecture e</td>
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<td></td>
<td>CHEM 123 General Chemistry Laboratory I c.e</td>
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<td></td>
<td>CHEM 124 General Chemistry II Lecture e</td>
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<tr>
<td></td>
<td>CHEM 125 General Chemistry Laboratory II c.e</td>
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<tr>
<td></td>
<td>CHEM 222 Analytical Chemistry</td>
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Select one of the following advanced laboratory courses:
CHEM 414 Advanced Inorganic Chemistry
CHEM 432 Advanced Organic Chemistry
CHEM 444 Physical Chemistry III

Select one of the following advanced lecture 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
Electives 7-27

Total Hours 120

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.

Course       Title                                              Hours
First Year
Fall Semester
ENGL 160 Academic Writing I: Writing in Academic and Public Contexts 3
MATH 180 Calculus I 4
Select one of the following:

CHEM 232 Organic Chemistry I 4
CHEM 233 Organic Chemistry Laboratory I 2
CHEM 234 Organic Chemistry II 4
CHEM 314 Inorganic Chemistry 4
CHEM 333 Advanced Synthetic Laboratory 3
CHEM 342 Physical Chemistry I 3
CHEM 343 Physical Chemistry Laboratory 3
CHEM 346 Physical Chemistry II 3
CHEM 402 Chemical Information Systems 2
CHEM 421 Instrumental Analysis 3
CHEM 452 Biochemistry I 4

a Students should consult the General Education (http://catalog.uic.edu/ucat/degree-programs/general-education) section of the catalog for a list of approved courses in this category.
b MATH 180 fulfills the LAS Quantitative Reasoning requirement.
c This course is approved for the Analyzing the Natural World General Education category.
d CHEM 116 and CHEM 118 are recommended.
e General Education credit is given for successful completion of both CHEM 122/CHEM 123 or CHEM 124/CHEM 125.
f CHEM 343 fulfills the LAS Writing-in-the-Discipline requirement.
**CHEM 116**  
Honors and Majors General and Analytical Chemistry I<sup>a</sup>

**CHEM 122**  
General Chemistry I Lecture

**CHEM 123**  
General Chemistry Laboratory I

General Education Requirement course  

**Spring Semester**

**ENGL 161**  
Academic Writing II: Writing for Inquiry and Research  

**MATH 181**  
Calculus II  

Select one of the following:

**CHEM 118**  
Honors and Majors General and Analytical Chemistry II<sup>b</sup>

**CHEM 124**  
General Chemistry II Lecture

**CHEM 125**  
General Chemistry Laboratory II

General Education Requirement course  

**Second Year**

**Fall Semester**

**CHEM 222**  
Analytical Chemistry (or Electives)<sup>c</sup>  

**CHEM 232**  
Organic Chemistry I  

**CHEM 233**  
Organic Chemistry Laboratory I

**PHYS 141**  
General Physics I (Mechanics)  

**Spring Semester**

**CHEM 234**  
Organic Chemistry II

**CHEM 333**  
Advanced Synthetic Laboratory

**PHYS 142**  
General Physics II (Electricity and Magnetism)  

Foreign Language  

**Third Year**

**Fall Semester**

**CHEM 314**  
Inorganic Chemistry

**MATH 210**  
Calculus III

Foreign Language  

General Education Requirement course  

**Spring Semester**

**CHEM 342**  
Physical Chemistry I<sup>b</sup>

**CHEM 452**  
Biochemistry I

General Education Requirement course  

Foreign Language  

Electives  

**Fourth Year**

**Fall Semester**

**CHEM 343**  
Physical Chemistry Laboratory<sup>d</sup>

**CHEM 402**  
Chemical Information Systems  

**CHEM 346**  
Physical Chemistry II<sup>a</sup>

**CHEM 415**  
Inorganic Chemistry Laboratory  

**CHEM 455**  
Biochemistry Laboratory  

**CHEM 499**  
Supervised Research

Foreign Language  

**Spring Semester**

**CHEM 421**  
Instrumental Analysis

**CHEM 414**  
Advanced Inorganic Chemistry  

**CHEM 432**  
Advanced Organic Chemistry

**CHEM 444**  
Physical Chemistry III

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

Electives  

General Education Requirement course  

**Total Hours**  

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<sup>a</sup> CHEM 116 and CHEM 346 are offered fall semester only.

<sup>b</sup> CHEM 118 and CHEM 342 are offered spring semester only.

<sup>c</sup> Students who take CHEM 116 and CHEM 118 to fulfill the general chemistry requirement do not need to take CHEM 222.

<sup>d</sup> CHEM 343 fulfills the LAS Writing-in-the-Discipline requirement.