Biochemistry

An interdepartmental B.S. biochemistry major is offered in the College of Arts and Sciences. The B.S. in biochemistry degree is managed by an interdepartmental committee composed of biochemists, bioorganic chemists, and molecular/cellular biologists. The committee administers the degree, monitors the academic program, provides research possibilities, and advises student majors. The director of the program is currently Linda J. Lowe-Krentz. Faculty in both Biological Sciences and Chemistry serve as advisors.

**BACHELOR OF SCIENCE DEGREE IN BIOCHEMISTRY**

**College and University Requirements**

- ENGL 001 Composition and Literature 3
- ENGL 002 Composition and Literature II 3
- First Year Seminar 3
- Non-science Electives 1 16

**Collateral Science Requirements**

Select one of the following options: 9-10

**Option A**

- PHY 010 General Physics I & PHY 012 General Physics II & PHY 022 and Introductory Physics Laboratory I & Introductory Physics Laboratory II

**Option B**

- PHY 011 Introductory Physics I & PHY 012 Introductory Physics Laboratory I & PHY 021 Introductory Physics II and Introductory Physics Laboratory II & Introductory Physics Laboratory II

Select one of the following options: 2 10-12

**Option A**

- MATH 051 Survey of Calculus I
- MATH 052 Survey of Calculus II
- MATH 043 Survey of Linear Algebra

**Option B**

- MATH 021 Calculus I
- MATH 022 Calculus II
- MATH 023 Calculus III

One statistics course 2 3
- CSE 012 Survey of Computer Science 3 or ENGR 010 Applied Engineering Computer Methods

**Required Chemistry Courses**

- CHM 040 Concepts, Models and Experiments I 4
- CHM 041 Concepts, Models and Experiments II 4
- CHM 110 Organic Chemistry I & CHM 111 Organic Chemistry Laboratory I 4
- CHM 112 Organic Chemistry II & CHM 113 Organic Chemistry Laboratory II 4
- CHM 194 Physical Chemistry for Biological Sciences 3
- CHM 307 Advanced Inorganic Chemistry 3
- CHM 332 Analytical Chemistry 3

**Required Biological Science courses**

- BIOS 041 Biology Core I: Cellular and Molecular and Biology Core I: Cellular and Molecular Lab
- BIOS 042
- BIOS 115 Biology Core II: Genetics
- BIOS 371 Elements of Biochemistry I
- BIOS 372 Elements of Biochemistry II
- BIOS 377 Biochemistry Laboratory
- Advanced Laboratory 4
- Electives in Biological Sciences (3 hours minimum) 4 3

**Technical Writing (2 hours minimum)** 2

**Total Credits** 100-103

1. 16 hours to be broadly distributed in fields of thought other than natural science and mathematics, including at least 8 hours each in humanities and social sciences.
2. Mathematics option and statistics course must be at least 12 hours combined.
3. The CHM 030 / CHM 031 sequence may be substituted.
4. The three credit hours of biological sciences electives are chosen with the approval of the adviser.

**MODEL PATTERN ROSTER**

**First Year**

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<th>Credits</th>
<th>CHM 040</th>
<th>BIOS 041 &amp; BIOS 042</th>
<th>ENGL 001</th>
<th>ENGL 002</th>
<th>PHY 010 &amp; PHY 012</th>
<th>PHY 011 &amp; PHY 012</th>
<th>MATH 051 &amp; MATH 052</th>
<th>MATH 021 &amp; MATH 022</th>
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**Second Year**

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<th>Credits</th>
<th>CHM 110 &amp; CHM 111</th>
<th>CHM 112 &amp; CHM 113</th>
<th>BIOS 115</th>
<th>BIOS 130 &amp; MATH 043 or 023</th>
<th>PHY 013 &amp; PHY 022</th>
<th>PHY 021 &amp; PHY 022</th>
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**Third Year**

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<tr>
<th>Credits</th>
<th>CHM 194</th>
<th>CHM 332</th>
<th>BIOS 371</th>
<th>BIOS 372</th>
<th>BIOS 377</th>
<th>CSE 012</th>
<th>Technical Writing</th>
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**Fourth Year**

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<th>Credits</th>
<th>BIOS Advanced laboratory course(s)</th>
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<td>BIOS elective</td>
<td>CHM 307</td>
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**Total Credits: 62**

1. A statistics course from the MATH department could also fulfill the statistics requirement.