**BIOCHEMISTRY**  
(for students entering Biology in Fall 2012 or later – revised July 2013)

**Graduation Requirements:**
- A minimum 2.0 average in all biology courses required for this major
- A minimum of 32 credits at or above the 300-level completed at a Purdue campus
- At least one 500-level Biology course other than BIOL 54200
- 120 Total Credits

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<th>BIOLOGY:</th>
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<tr>
<td>1. BIOL 12100 Biology I: Diversity, Ecology and Behavior (2 cr.; fall) or</td>
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<td>BIOL 19500 Biodiversity, Ecology &amp; Evolution (3 cr.; fall)</td>
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<td>2. BIOL 13100 Biology II: Development, Structure, and Function of Organisms (3 cr.; spring) or</td>
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<td>BIOL 19500 Organismal Development &amp; Physiology (3 cr.; spring)</td>
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<td>3. BIOL 13500 1st Year Biology Lab (2 cr.; both) or</td>
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<td>BIOL 14501 1st Year Biology Lab w/Neuro Research Project (2 cr.; fall) or</td>
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<td>BIOL 14502 1st Year Biology Lab w/Micro Research Project (2 cr.; spring) or</td>
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<td>IT 22600 Biotechnology Lab (2 cr.; fall)</td>
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<td>4. BIOL 23100 Biology III: Cell Structure and Function (3 cr.; fall)</td>
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<td>5. BIOL 23200 Laboratory in Biology III: Cell Structure and Function (2 cr.; fall)</td>
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<td>6. BIOL 24100 Biology IV: Genetics and Molecular Biology (3 cr.; spring)</td>
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<td>7. BIOL 24200 Laboratory in Genetics and Molecular Biology (2 cr.; spring)</td>
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<td>8. BIOL 28600 Intro. to Ecology &amp; Evolution (2 cr.; spring)</td>
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9. **Intermediate Requirement:** Choose one of these eight options:  
(Biochemistry majors must choose BIOL 39500, Macromolecules)

- A. BIOL 32800 Principles of Physiology (4 cr.; spring)  
- B. BIOL 36600 Principles of Development (3 cr.; spring)  
- C. BIOL 39500 Macromolecules (3 cr.; fall)  
- D. BIOL 41500 Intro. to Molecular Biology (3 cr.; fall)  
- E. BIOL 41600 Viruses & Viral Diseases (3 cr.; spring)  
- F. BIOL 42000 Eukaryotic Cell Biology (3 cr.; fall)  
- G. BIOL 43600 Neurobiology (3 cr.; fall)  
- H. BIOL 43800 General Microbiology (3 cr.; fall)

10. BIOL 41500 Intro. to Molecular Biology (3 cr.; fall)  
11. BIOL 42000 Eukaryotic Cell Biology (3 cr.; fall)  
12. BIOL 59500 Methods & Measurement in Physical Biochemistry (3 cr.; fall)

13. **Biology Electives:** One of these courses:

- A. BIOL 41600 Viruses and Viral Diseases (3 cr.; spring)  
- B. BIOL 43800 General Microbiology (3 cr.; fall)  
- C. BIOL 47800 Intro to Bioinformatics (3 cr.; fall)  
- D. BIOL 48100 Eukaryotic Genetics (3 cr.; spring)  
- E. BIOL 51100 Intro. to X-Ray Crystallography (3 cr.; spring)  
- F. BIOL 51700 Molecular Biology of Proteins (2 cr.; spring)  
- G. BIOL 52900 Bacterial Physiology (3 cr.; spring)  
- H. BIOL 53700 Immunology (3 cr.; spring)  
- I. BIOL 53800 Molecular, Cellular & Developmental Neurobiology (3 cr.; spring)  
- J. BIOL 54100 Molecular Genetics of Bacteria (3 cr.; fall)

14. BIOL 44201 Introductory Module: Protein Expression plus two additional modules of BIOL 442xx1 (1-2 cr.; both) (various titles) or 542001 Neurophysiology (1 cr.; fall)

15. BCHM 56100 General Biochemistry I (3 cr.; fall)  
16. BCHM 56200 General Biochemistry II (3 cr.; spring)

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1 The two additional modules may be replaced by one of these:  
BIOL 43900 Microbiology Lab (2 cr.; fall); or by four credits of undergraduate research (BIOL 49400 or 49900 – this must be approved in advance by the Undergraduate Studies Committee).

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Other Biochemistry requirements and the extra requirements for the Biochemistry Honors Curriculum are on the back of this page.
CHEMISTRY
1. CHM 11500 General Chemistry (4 cr.; both)
2. CHM 11600 General Chemistry (4 cr.; both)
3. CHM 26505 Organic Chemistry (3 cr.; fall)
4. CHM 26300 Organic Chemistry Lab (1 cr.; fall)
5. CHM 26605 Organic Chemistry (3 cr.; spring)
6. CHM 26400 Organic Chemistry Lab (1 cr.; spring)
7. One of these three courses:
   A. BCHM 22100 Analytical Biochemistry (3 cr.; both)
   B. CHM 22400 Intro. to Quantitative Analysis (4 cr.; spring)
   C. CHM 32100 Analytical Chemistry (4 cr.; fall)
8. One of these two options:
   A. CHM 37200 Physical Chemistry (4 cr.; spring)
   B. CHM 37300 Physical Chemistry (3 cr.; fall) and CHM 37400 Physical Chemistry (4 cr.; spring)

MATH
For the Biochemistry Major, you must choose one of the following calculus options when fulfilling CoS Core requirements:
MA 16100-16200, MA 16500-16600, or MA 17300.

PHYSICS
One of these two options:
1. PHYS 22000 General Physics (4 cr.; both) and PHYS 22100 General Physics (4 cr.; both)
2. PHYS 17200 Modern Mechanics (4 cr.; both) and one of the following two choices:
   A. PHYS 27200 Electric and Magnetic Interactions (4 cr.; both) or
   B. PHYS 24100 Electricity and Optics (3 cr.; both) and PHYS 24200 Intro to Heat and Thermal Physics (1 cr.; spring) and PHYS 25200 Electricity and Optics Laboratory (1 cr.; spring)

COLLEGE OF SCIENCE CORE REQUIREMENTS
Composition and Presentation; Teambuilding and Collaboration; Language and Culture; Great Issues; General Education; Multidisciplinary Experience; Mathematics; Statistics; Computing (see handout).

FREE ELECTIVES
Approximately 0 - 5 credits

BIOCHEMISTRY HONORS CURRICULUM
A 3.0 or higher graduation index is required to graduate in the Biochemistry Honors Curriculum.

In addition to the requirements listed for the Biochemistry program, at least two of the following courses/course sequences must be completed when fulfilling other requirements:
1. CHM 32100 Analytical Chemistry (4 cr.; fall)
2. CHM 37300 Physical Chemistry (3 cr.; fall) and CHM 374 Physical Chemistry (4 cr.; spring)
3. PHYS 17200 Modern Mechanics (4 cr.; both) and one of the following two choices:
   A. PHYS 27200 Electric and Magnetic Interactions (4 cr.; both) or
   B. PHYS 24100 Electricity and Optics (3 cr.; both) and PHYS 25200 Electricity and Optics Laboratory (1 cr.; spring)