

## Biochemistry

ADVISORY COMMITTEE **Bebout** (Coordinator, Chemistry), **Coleman** (Chemistry), **Landino** (Chemistry) and **Shakes** (Biology).

Biochemistry is a formalized minor within the Interdisciplinary Studies program. Students must declare this minor before the beginning of preregistration for the final semester of their senior year by submitting a Biochemistry Minor Declaration form with the Director of Interdisciplinary Studies (Professor Schwartz in the Charles Center). Electives are to be selected by each student in consultation with a member of the Advisory Committee.

A Biochemistry minor is especially appropriate for those interested in advanced studies in Biology, Chemistry, Biological Psychology or Medicine.

**Biochemistry Minor:** Two possible sequences for completing the course work required for the biochemistry minor are presented below. Courses enclosed in parentheses are only necessary to complete the minor if they are prerequisites to the upper level electives selected. See list below to determine typical semester availability of electives. Students with particularly strong preparation in the sciences and math could consider completing courses at a faster pace.

**Required credit hours:** 18 (12 credit core/6 credits in electives/9 hours in prerequisites)

### Sem. Life Sciences Scheduling

- 1 BIOL 204: Principles of Biology  
CHEM 103: General Chemistry I
- 2 BIOL 203: Principles of Biology  
CHEM 206: Organic Chemistry I
- 3 (BIOL 206: General Zoology)  
CHEM 209: Organic Chemistry II or CHEM 307:  
Organic Chemistry II for Life Sciences  
(Math 111: Calculus)
- 4 CHEM 308: General Chemistry II for Life Sciences or  
CHEM 305: Inorganic and General Chemistry II  
(Math 112: Calculus)  
(CHEM 354: General Chemistry Lab II)
- 5 Elective(s)
- 6 BIOL 414: Biochemistry
- 7 Elective(s)
- 8 Elective(s)

### Sem. Physical Sciences Scheduling

- 1 CHEM 103: General Chemistry I  
(Math 111: Calculus)
- 2 CHEM 206: Organic Chemistry I  
(Math 112: Calculus)
- 3 CHEM 209: Organic II or Chem 307: Organic Chemistry II  
for Life Sciences  
BIOL 204: Principles of Biology
- 4 CHEM 308: General Chemistry II for Life Sciences or CHEM  
305: Inorganic and General Chemistry II  
BIOL 203: Principles of Biology  
(CHEM 354: General Chemistry Lab II or Chem 356: Inor-  
ganic and Quantitative Laboratory Methods)
- 5 (BIOL 206: General Zoology)  
Elective(s)
- 6 CHEM 414: Biochemistry
- 7 Elective(s)
- 8 Elective(s)

**REQUIRED CORE** (12 or more credits): Only two of these four courses can be applied to both a major and a minor. The minor requires 9 or more additional credits in prerequisites: Chemistry 103, Chemistry 206 and either Biology 204 or one of Chemistry 305 or 308 or 335.

- CHEM 209: Organic Chemistry II OR CHEM 307: Organic Chemistry II for Life Sciences
- BIOL 203: Principles of Biology: Molecules, Cells and Development
- One of CHEM 305: Inorganic and General Chemistry II; CHEM 308: General Chemistry II for Life Sciences, CHEM 335: Freshman Honors Chem; OR BIOL 204: Principles of Biology: Organisms, Ecology and Evolution
- CHEM 414: Biochemistry OR BIOL 414: Biochemistry

**ELECTIVES** (6 or more credits): Students must select two additional courses from those listed below which are not offered by their major department; students majoring in neither Biology nor Chemistry must select one Biology course and one Chemistry course. Four credit electives have an integrated laboratory component.

- BIOL 345: Neurobiology. Spring (3). Prerequisite: BIOL 203, BIOL 206
- BIOL 406: Molecular Cell Biology. Fall (3). Prerequisite: BIOL 203, BIOL 204; CHEM 307 recommended
- BIOL 415: General Endocrinology. Fall (3). Prerequisites: BIOL 206, CHEM 307
- BIOL 420: Genetic Analysis. Fall (3). Prerequisite: BIOL 203, BIOL 204
- BIOL 433: Developmental Biology. Fall (3). Prerequisite: BIOL 206
- BIOL 436: Advanced Cell Biology. Spring (3). Prerequisite: BIOL 406
- BIOL 437: Immunology. Spring (3). Prerequisites: BIOL 203, BIOL 204
- BIOL 440: Microbiology. Spring (3). Prerequisite: BIOL 203, BIOL 204
- BIOL 442: Molecular Genetics. Fall (3). Prerequisite: BIOL 203, BIOL 204
- CHEM 309: Instrumental Analysis. Fall (4). Prerequisites: CHEM 305 or CHEM 308 or Chem 335, CHEM 354 or Chem 356
- CHEM 341: Physical Chemistry for Life Sciences. Spring (3). Prerequisites: CHEM 305 or CHEM 308 or CHEM 335, MATH 112 or 113
- CHEM 415: Advanced Biochemistry. Fall (3). Prerequisite: CHEM 414 or BIOL 414
- CHEM 417: Neurochemistry. Fall (3). Prerequisites: CHEM 414 or BIOL 414