

Biochemistry

ADVISORY COMMITTEE **Bebout** (Coordinator, Chemistry), **Coleman** (Chemistry), **Hinton** (Biology), **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 to 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, Neuroscience 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 220¹: Introduction to Organisms, Ecology, Evolution
CHEM 103: General Chemistry I
- 2 BIOL 225²: Introduction to Molecules, Cells, Development
CHEM 206: Organic Chemistry I
- 3 (BIOL 302³: Integrative Biology: Animals)
CHEM 209: Organic Chemistry II or CHEM 307: Organic Chemistry II for Life Sciences
(MATH 111: Calculus or MATH 131: Calculus I for Life Sciences)
- 4 CHEM 308: General Chemistry II for Life Sciences or CHEM 305: Inorganic and General Chemistry II
(MATH 112: Calculus or MATH 132: Calculus II for Life Sciences)
- 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 220¹: Introduction to Organisms, Ecology, Evolution
- 4 CHEM 305: Inorganic and General Chemistry II or CHEM 308: General Chemistry II for Life Sciences
BIOL 225²: Introduction to Molecules, Cells, Development
- 5 (BIOL 302³: Integrative Biology: Animals)
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 2201 or one of Chemistry 305 or 308 or 335.

- CHEM 209: Organic Chemistry II OR CHEM 307: Organic Chemistry II for Life Sciences
- BIOL 225²: Introduction to Molecules, Cells, 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 220¹: Introduction to Organisms, Ecology, 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.

- CHEM 306⁴: Microbiology. Spring (3). *Prerequisite:* BIOL 220¹, BIOL 225²
- BIOL 310⁵: Molecular Cell Biology. Fall, Spring (3). *Prerequisite:* BIOL 220¹, BIOL 225²; *Prerequisite or corequisite:* CHEM 206
- BIOL 345: Neurobiology. Spring (3). *Prerequisite:* BIOL 225²
- BIOL 415: General Endocrinology. Fall (3). *Prerequisites:* BIOL 302³, BIOL 310⁵
- BIOL 420: Genetic Analysis. Fall (3). *Prerequisite:* BIOL 220¹, BIOL 225²
- BIOL 433: Developmental Biology. Fall (3). *Prerequisite:* BIOL 220¹, BIOL 225², BIOL 310⁵
- BIOL 436: Advanced Cell Biology. Spring (3). *Prerequisite:* BIOL 310⁵ (Not offered 2011-2012)
- BIOL 437: Immunology. Spring (3). *Prerequisites:* BIOL 220¹, BIOL 225² and BIOL 306⁴ or BIOL 310⁵
- BIOL 442: Molecular Genetics. Fall (3). *Prerequisite:* BIOL 220¹, BIOL 225², BIOL 310⁵
- CHEM 309: Instrumental Analysis. Fall (3). *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 (Not offered 2011-2012)
- CHEM 415: Advanced Biochemistry. Fall (3). *Prerequisite:* CHEM 414 or BIOL 414
- CHEM 417: Neurochemistry. Fall (3). *Prerequisites:* CHEM 414 or BIOL 414

¹ Formerly BIOL 204

² Formerly BIOL 203

³ Formerly BIOL 206

⁴ Formerly BIOL 440

⁵ Formerly BIOL 406