Biochemistry

College of Science, Engineering and Technology
Department of Chemistry & Geology
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Chair: Jeffrey R. Pribyl

Biochemistry is a discipline which encompasses both biology and chemistry. This rapidly expanding science focuses on the study of the molecular aspects of living organisms. The tools and concepts of biochemistry are important as a foundation for careers in many areas of research and in medicine. Students considering a BA or BS degree in biochemistry should consult the biochemistry advisor for specific information regarding the program.

Admission to Major. Admission to a program is necessary before a student can enroll in 300- and 400-level courses. To be eligible for admission to the biochemistry program a student must have declared biochemistry as a first major, completed 32 credits, including BIOL 105 and 106 as well as CHEM 201 and 202 and achieved a minimum grade point average of 2.0. Students should also have an assigned biochemistry advisor with whom they have discussed the program. Applications for admission to the biochemistry program are available in the department office.

BIOCHEMISTRY BA

Required for Major (Support Courses, 19 credits):
BIOL 105 General Biology I (4)
BIOL 106 General Biology II (4)
BIOL 211 Genetics (3)
BIOL 270 Microbiology (4)
BIOL 479 Molecular Biology (4)

Required for Major (Core, 34 credits):
CHEM 201 General Chemistry I (5)
CHEM 202 General Chemistry II (5)
CHEM 305 Analytical Chemistry (4)
CHEM 320 Organic Chemistry I (with lab) (5)
CHEM 321 Organic Chemistry II (2)
CHEM 331 Organic Chemistry II Lab (1)
CHEM 440 Physical Chemistry I (3)
CHEM 450 Physical Chemistry Lab I (1)
CHEM 460 Biochemistry I (3)
CHEM 461 Biochemistry II (3)
CHEM 465 Biochemical Techniques I (1)
CHEM 466 Biochemical Techniques II (2)
CHEM 474 Chromatography (2)
CHEM 495 Senior Seminar (1)
CHEM 498 Undergraduate Research (2)

Required Electives (9 credits):
Choose a minimum of 9 credits with approval from the advisor:
BIOL 300/400 Elective
BIOL 300/400 Elective
BIOL 300/400 Elective

Required for Bachelor of Arts (BA) degree ONLY:
Language (8)

Required Minor: None.

BIOCHEMISTRY BS

Required General Education (4 credits):
BIOL 105 General Biology I (4)

Required Support Courses (30-33 credits):
BIOL 106 General Biology II (4)
BIOL 211 Genetics (3)
BIOL 270 Microbiology (4)
BIOL 479 Molecular Biology (4)

PHYS 211 Principles of Physics I (4) AND
PHYS 212 Principles of Physics II (4) OR
PHYS 221 General Physics I (5) AND
PHYS 222 General Physics II (5)

Choose a minimum of 7 credits from the following:
MATH 121 Calculus I (4)
MATH 122 Calculus II (4)
STAT 154 Elementary Statistics (3)

Required for Major (Core, 40 credits):
CHEM 201 General Chemistry I (5)
CHEM 202 General Chemistry II (5)
CHEM 305 Analytical Chemistry (4)
CHEM 320 Organic Chemistry I (with lab) (5)
CHEM 321 Organic Chemistry II (2)
CHEM 331 Organic Chemistry II Lab (1)
CHEM 440 Physical Chemistry I (3)
CHEM 450 Physical Chemistry Lab I (1)
CHEM 460 Biochemistry I (3)
CHEM 461 Biochemistry II (3)
CHEM 465 Biochemical Techniques I (1)
CHEM 466 Biochemical Techniques II (2)
CHEM 474 Chromatography (2)
CHEM 495 Senior Seminar (1)
CHEM 498 Undergraduate Research (2)

Required Electives (Chemistry or Biology, 8 credits):
Choose a minimum of 8 credits with approval from the biochemistry advisor:
CHEM/BIOL 300/400 Elective
CHEM/BIOL 300/400 Elective
CHEM/BIOL 300/400 Elective

POLICIES/INFORMATION

The first year of coursework for biochemistry majors should include two semesters of chemistry (201, 202), two semesters of biology (105, 106) and one semester of mathematics (selection of course depends on mathematics background). Organic Chemistry should be taken during the second year. It is important for majors to take the biochemistry sequence during the third year. Participation in chemistry seminar is required of all majors.

GPA Policy: Students obtaining a major in biochemistry must maintain an overall GPA of 2.0 with no more than 5 credits of D work in chemistry or biochemistry courses.

P/N Grading Policy: Courses leading to a major or minor in chemistry or biochemistry may not be taken on a P/N basis, except where P/N grading is mandatory.

The department is recognized by the American Chemical Society and offers a BS (Chemistry) major that is approved by that organization. Anyone considering a chemistry or biochemistry major or minor should choose a departmental faculty member as an advisor and consult that advisor often throughout the course of study.