

BIOCHEMISTRY

Biochemistry

College of Science, Engineering and Technology

Department of Chemistry & Geology

242 Trafton Science Center N • 507-389-1963

Chair: Brian L Groh

Lyudmyla Carrison, Mary Hadley, Michael J. Lusch, Marie K. Pomije, Jeffrey R. Pribyl, Danaé Quirk Dorr, James Rife, Theresa Salerno, Daniel Swart, John D. Thoenke, Trent Vorlicek

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. This major is appropriate for students in pre-professional programs such as pre-dental, pre-medical, and pre-pharmacy programs.

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 BIOL 106 as well as CHEM 201 and CHEM 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.

POLICIES/INFORMATION

The first year of coursework for biochemistry majors should include two semesters of chemistry (CHEM 201, CHEM 202) and two semesters of biology (BIOL 105, BIOL 106). 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 2.2 in all courses required for their selected program with no more than 4 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. The BS Biochemistry program follows the ASBMB recommended curriculum for a biochemistry and molecular biology undergraduate major. Anyone considering a biochemistry major should choose a biochemist as an advisor and consult that advisor often throughout the course of study.

BIOCHEMISTRY BA

Required Support Courses for Major

BIOL	105	General Biology I (4)
BIOL	106	General Biology II (4)
BIOL	211	Genetics (4)
BIOL	270	Microbiology (4)
BIOL	479	Molecular Biology (4)

Required for Major

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 (3)

CHEM	331	Organic Chemistry II Lab (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)

Required Electives (9 credits)

Choose a minimum of 9 credits with approval from the advisor:

BIOL	300/400	Elective
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Required for Bachelor of Arts (BA) degree ONLY: Language (8 credits)

Required Minor: None.

BIOCHEMISTRY BS

Required Support Courses

BIOL	105	General Biology I (4)
BIOL	106	General Biology II (4)
BIOL	211	Genetics (4)
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 (4) AND
PHYS	223	General Physics II (3) AND
PHYS	233	General Physics III Laboratory (1)
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

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 (3)
CHEM	331	Organic Chemistry II Lab (1)
CHEM	440	Physical Chemistry I (3)
CHEM	450	Physical Chemistry Laboratory 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 advisor:

CHEM/BIOL	300/400	Elective
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Required Minor: None.