

2023-2024 Catalog

Biochemistry

Bachelor of Science
Academic Department
Biology

Biochemistry focuses on addressing biological questions through the application of chemical principles and techniques. The biochemistry major reflects the chemical theories and approaches that are central to increasing our understanding of biological phenomena. The field of biochemistry is becoming a very complex and wide ranging discipline concomitant with advances in both biology and chemistry. Students will be exposed to the breadth of biochemistry through their courses and research experiences.

This program is designed to give students a strong chemistry and biology background in both the theory and practice of biochemistry. Students from this program will be ready for graduate school, professional school, or employment.

Admission to courses beyond CHEM 1341 requires a "C" or better in their prerequisites at the University of St. Thomas or their equivalents at another appropriately accredited institution. The decision on the adequacy of an equivalent rests with the department chair.

The Bachelor of Science (BS) degrees in Chemistry and Biochemistry have been accredited by the American Chemical Society (ACS) Committee on Professional Training.

Total Credits 71-72

Chemistry Foundation Courses

Complete all of the following courses.

Item #	Course Title		Credits
<input type="checkbox"/> CHEM 1341	General Chemistry I	CHEM 1341 Corequisite: CHEM 1141	3
<input type="checkbox"/> CHEM 1141	General Chemistry I Laboratory	CHEM 1141 Corequisite: CHEM 1341	1
<input type="checkbox"/> CHEM 1342	General Chemistry II	CHEM 1342 Prerequisite (C or better): CHEM 1341/1141. Corequisite: CHEM 1142	3
<input type="checkbox"/> CHEM 1142	General Chemistry II Laboratory	CHEM 1142 Corequisite: CHEM 1342	1
<input type="checkbox"/> CHEM 2343	Organic Chemistry I	CHEM 2343 Prerequisite: CHEM 1342/1142; Corequisite: CHEM 2143.	3
<input type="checkbox"/> CHEM 2143	Organic Chemistry I Laboratory	CHEM 2143 Corequisite: CHEM 2343	1
<input type="checkbox"/> CHEM 3333	Organic Chemistry II	CHEM 3333 Prerequisite: CHEM 2343/2143; Corequisite: CHEM 3133.	3
<input type="checkbox"/> CHEM 3133	Organic Chemistry II Laboratory	CHEM 3133 Corequisite: CHEM 3333	1
<input type="checkbox"/> CHEM 3334	Biochemistry	CHEM 3334 Prerequisites: CHEM 2343, 2143	3
<input type="checkbox"/> CHEM 3134	Biochemistry Laboratory	CHEM 3134 Corequisite: CHEM 3334	1

<input type="checkbox"/>	CHEM 3343	Analytical Chemistry	CHEM 3343 Prerequisite: CHEM 1342/1142; Corequisite: CHEM 3143.	3
<input type="checkbox"/>	CHEM 3143	Analytical Chemistry Laboratory	CHEM 3143 Corequisite: CHEM 3343	1
<input type="checkbox"/>	CHEM 4332	Inorganic Chemistry	CHEM 4332 Prerequisites: CHEM 3333/3133; Corequisite: CHEM 4132.	3
<input type="checkbox"/>	CHEM 4132	Inorganic Chemistry Laboratory	CHEM 4132 Corequisite: CHEM 4332	1
<input type="checkbox"/>	CHEM 4362	Physical Chemistry II	CHEM 4362 Prerequisite (with a 'C' or better): CHEM 4361/4161.	3
<input type="checkbox"/>	CHEM 4162	Reaction Kinetics		1
<input type="checkbox"/>	CHEM 4112	Scientific Communication	CHEM 4112 Prerequisite: Junior/Senior Standing.	1
<input type="checkbox"/>	CHEM 4150	Laboratory Research Methods	CHEM 4150 Prerequisites: Junior/Senior Standing	1
<input type="checkbox"/>	CHEM 4151	Senior Thesis	CHEM 4151 Prerequisites: Junior/Senior Standing; CHEM 4150	1
<input type="checkbox"/>	CHEM 4334	Advanced Biochemistry	CHEM 4334 Prerequisites (With Grade of 'C' or Better): CHEM/BIOL 3334	3

Chemistry Elective Option

Complete either CHEM 4344 OR CHEM 4331/4131.

Item #	Course Title		Credits
<input type="checkbox"/> CHEM 4344	Advanced Analytical Techniques	CHEM 4344 Prerequisites: CHEM 3343/3143	3
<input type="checkbox"/> CHEM 4331	Advanced Organic Chemistry	CHEM 4331 Prerequisites: CHEM 3333/3133; Corequisite: CHEM 4131.	3
<input type="checkbox"/> CHEM 4131	Advanced Organic Chemistry Laboratory	CHEM 4131 Corequisite: CHEM 4331.	1

Biology

Must take in order.

Item #	Course Title		Credits
<input type="checkbox"/> BIOL 1351	Introduction to Population Biology and Evolution	BIOL 1351 Corequisite: BIOL 1151	3
<input type="checkbox"/> BIOL 1151	Introduction to Biology Practicum	BIOL 1151 Corequisite: BIOL 1351	1
<input type="checkbox"/> BIOL 1352	Introduction to Cell and Molecular Biology	BIOL 1352 Corequisite: BIOL 1152	3
<input type="checkbox"/> BIOL 1152	Basic Lab Techniques in Biology	BIOL 1152 Corequisite: BIOL 1352	1
<input type="checkbox"/> BIOL 3321	Genetics	Prerequisites (with a grade of 'C' or better): BIOL 1351/1151, 1352/1152 and CHEM 1341/1141.	3
<input type="checkbox"/> BIOL 3351	Molecular Biology	BIOL 3351 Prerequisites (With Grade of 'C' or Better): BIOL 3321, CHEM 2343	3

Mathematics

Must take in order.

Item #	Course Title		Credits
<input type="checkbox"/> MATH 1431	Calculus I	MATH 1431 Prerequisite: MATH 1430 or department consent.	4
<input type="checkbox"/> MATH 1432	Calculus II	MATH 1432 Prerequisite: Grade of 'C' or Better in MATH 1431	4

Physics

Choose **one** sequence of courses

Item #	Course Title		Credits
<input type="checkbox"/> University Physics I & II w/ Labs			
<input type="checkbox"/> General Physics I & II w/ lab			