

BIOCHEMISTRY B.S.

Overview

Biochemistry can be an excellent choice for a career in industry, medical settings, academic and government positions. The degree is also an excellent choice to prepare students for medical, pharmacy and dental school.

Biochemistry is the study of the structure, composition, and chemical reactions of substances in living systems. Biochemistry emerged as a separate discipline when scientists combined biology with organic, inorganic, and physical chemistry and began to study how living things obtain energy from food, the chemical basis of heredity, what fundamental changes occur in disease, and related issues. Biochemistry includes the sciences of molecular biology, immunochemistry, and neurochemistry, as well as bioinorganic, bioorganic, and biophysical chemistry.

Students are required to take the following courses with their corresponding laboratories: General Chemistry I (CHE-101 CHE-101), General Chemistry II (CHE-102), Introductory Biology I (BIO-101), Introductory Biology II (BIO-102), Organic Chemistry (CHE-219), Organic Chemistry II (CHE-220), Biochemistry (CHE-303/BIO-303), Physical Chemistry (CHE-311 or CHE-321), Analytical Chemistry (CHE-331), Advanced Biochemistry (CHE-344/BIO-344), Medicinal Chemistry (CHE-351), Genetics (BIO-302), Molecular Cell Biology (BIO-312) and the capstone (CHE-499/BIO-499). Other required courses include the following: Physics I (PHY-101 or PHY-111), Physics II (PHY-102 or PHY-112), Calculus I (MAT-125 and Biostatistics (MAT-201).

Program Requirements

Students within a department must maintain a minimum of 2.0 G.P.A. in courses taken at D'Youville in coursework required for their major. Students who fail to earn this G.P.A will be placed on probation in the major. Probation may continue for a maximum of three consecutive semesters or a total of four nonconsecutive semesters. Students who exceed these limits will be dismissed from the major. Students may appeal these decisions on academic status by submitting, in writing to the department chairperson, reasons why exceptional consideration may be justified.

Course Requirements for the Major:

Code	Title	Credits
General Education Requirements		27
Chemistry/Biology courses		53
Additional mathematics and natural science courses		15
Electives		27
Total Credits		122

In the specific area of concentration:

Code	Title	Credits
CHE-101	General Chemistry I	3
CHE-101L	General Chemistry Laboratory	1
CHE-102	General Chemistry II	3
CHE-102L	General Chemistry Laboratory II	1
CHE-219	Organic Chemistry	3
CHE-219L	Organic Chemistry Lab	1

CHE-220	Organic Chemistry II	3
CHE-220L	Organic Chemistry II Lab	1
CHE-303	Biochemistry	3
or BIO-303	Biochemistry	
CHE-303L	Biochemistry Laboratory	1
or BIO-303L	Biochemistry Lab	
CHE-344	Advanced Biochemistry	3
or BIO-344	Advanced Biochemistry	
CHE-344L	Advanced Biochemistry Lab	1
or BIO-344L	Advanced Biochemistry Lab	
CHE-311	Physical Chemistry I	3
or CHE-321	Physical Chemistry for the Life Sciences	
CHE-331	Analytical Chemistry	4
CHE-351	Medicinal Chemistry	3
BIO-101	Introductory Biology I	4
BIO-101L	Intro Bio Lab I	0
BIO-102	Introductory Biology II	4
BIO-102L	Intro Bio Lab II	0
BIO-302	Genetics	4
BIO-302L	Genetics Lab	0
BIO-312	Molecular Cell Biology	4
BIO-499	Capstone Experience	3
or CHE-499	Capstone Experience	
Total Credits		53

In other academic areas required for the major:

Code	Title	Credits
MAT-125	Calculus I	4
MAT-201	Biostatistics	3
PHY-101	General Physics I	3
or PHY-111	Introduction to Physics	
PHY-101L	Gen Physics Lab I	1
or PHY-111L	Introduction to Physics Lab	
PHY-102	General Physics II	3
or PHY-112	Introduction to Physics	
PHY-102L	Gen Physics Lab II	1
or PHY-112L	Introduction to Physics Lab	
Total Credits		15

Admissions

Admission into the Biochemistry BS degree program requires a minimum SAT score of 1100 (or ACT of 24), a high school average of 85 percent and a rank in the top 50 percent of one's class.

Transfer students and those entering after D'Youville College matriculation are required to have a minimum overall and required science GPA of 2.75.