

BIOPHYSICS CONCENTRATION

Program Overview

This concentration may interest students majoring in physics, biology, kinesiology, chemistry, biochemistry (BCMB), psychology, neuroscience, pharmacy, health sciences, and any student interested in the application of physics to biological systems. It provides a good background for further studies in biophysics, biomechanics, and biomedical fields and provides background for additional graduate or professional level work.

Code	Title	Hours
Select one of the following:		4
PHY 001	INTRODUCTION TO PHYSICS I (with lab and discussion)	
PHY 011	GENERAL PHYSICS I (with lab and discussion)	
Select one of the following:		4
PHY 002	INTRODUCTION TO PHYSICS II (with lab and discussion)	
PHY 012	GENERAL PHYSICS II (with lab and discussion)	
PHY 003	CONTEMPORARY TOPICS SEMINAR	1
Select one of the following:		4
CHEM 001 & CHEM 003	GENERAL CHEMISTRY I and GENERAL CHEMISTRY I LAB	
CHEM 097 & CHEM 098	ORGANIC CHEMISTRY I and ORGANIC CHEMISTRY I LAB	
Select one of the following:		4
CHEM 002 & CHEM 004	GENERAL CHEMISTRY II and GENERAL CHEMISTRY II LAB	
CHEM 108 & CHEM 110	ORGANIC CHEMISTRY II and ORGANIC CHEMISTRY II LAB	
Select one of the following:		4
BIO 165	CELL BIOLOGY	
BIO 186 & BIO 187L	MOLECULAR BIOLOGY and APPLIED MOLECULAR BIOLOGY LAB	
Equivalent course from Pharmacy (with lab and discussion)		
Select one of the following:		3
PHY 132	MEDICAL BIOPHYSICS	
BIO 132	MEDICAL BIOPHYSICS	
BIO 137 & 137L	MEDICAL AND SPORTS BIOMECHANICS and MEDICAL AND SPORTS BIOMECHANICS LAB	4
Select one of the following:		3-4
CHEM 161	BIOPHYSICAL CHEMISTRY	
BIO 188	STRUCTURAL BIOLOGY	
BIO/CS 116	BIOINFORMATICS	
PHY 197 & PHY 198	RESEARCH I and RESEARCH II ¹	3

¹ Research Participation (Capstone): At least 3 cr of research participation at Drake and/or at least one REU (Research Experience for Undergraduates). A paper and an oral presentation are required. The topic must be related to biophysics and be approved by the student's advisor in advance.

Requirements for the program also include prerequisite/co-requisite courses in mathematics. Depending on the student's career goals, the academic advisor may recommend other courses chosen from electives.

Grade Requirements for Graduation

3.0 minimum (B) average is required in all biophysics-credit courses.