

Biomedical Sciences, BS

Requirements

The Bachelor of Science with a major in biomedical sciences requires a minimum of 120 s.h., including at least 80–84 s.h. of work for the major. Students must maintain a grade-point average of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences GE CLAS Core.

The interdisciplinary major provides an excellent foundation for medical training and for research and/or practice in the chemical, genetic, cellular, and physiological bases of human disease. The curriculum includes required and elective coursework in biochemistry and molecular biology, biology, chemistry, health and human physiology, mathematics, microbiology and immunology, physics, psychology, sociology, and statistics. Students who wish to apply transfer credit toward the major should consult their departmental advisor.

The BS with a major in biomedical sciences requires the following coursework.

Requirements	Hours
Required Courses	65-67
Elective Courses	15-17

Required Courses

Students complete the following coursework (65–67 s.h.).

Chemistry

Course #	Title	Hours
All of these:		
BMB:3120	Biochemistry and Molecular Biology I	3
BMB:3130	Biochemistry and Molecular Biology II	3
CHEM:1110	Principles of Chemistry I	4
CHEM:1120	Principles of Chemistry II	4
CHEM:2210	Organic Chemistry I	3
CHEM:2220	Organic Chemistry II	3
CHEM:2410	Organic Chemistry Laboratory	3

Life Sciences

Course #	Title	Hours
All of these:		
BIOL:1411	Foundations of Biology	4
BIOL:3373	Human Population Genetics and Variation	3
HHP:3500	Human Physiology	3
MICR:2157- MICR:2158	General Microbiology - General Microbiology Laboratory (both courses should be taken in the same semester)	5

One of these:

BIOL:2211	Genes, Genomes, and the Human Condition	3
BIOL:2512	Fundamental Genetics	4

Mathematics

Course #	Title	Hours
One of these:		
MATH:1460	Calculus for the Biological Sciences	4
MATH:1550	Engineering Mathematics I: Single Variable Calculus	4
MATH:1850	Calculus I	4

Statistics

Course #	Title	Hours
This course:		
STAT:3510	Biostatistics	3

Physics

Course #	Title	Hours
One of these sequences:		
PHYS:1511- PHYS:1512	College Physics I-II	8
PHYS:1611- PHYS:1612	Introductory Physics I-II	8

Social Sciences

Course #	Title	Hours
Both of these:		
PSY:1001	Elementary Psychology	3
SOC:1010	Introduction to Sociology	3-4
One of these:		
CPH:1800	Social and Psychological Determinants of Health: Changing Behavior, Improving Health	3
PSY:2130	Advanced Psychology for Pre-Medical Track	3
PSY:2930	Abnormal Psychology: Health Professions	3

Elective Courses

Students complete a total of 15–17 s.h. of elective coursework chosen from the following lists.

Lecture Courses

Course #	Title	Hours
Two of these:		
BIOL:2254	Endocrinology	3
BIOL:2723	Cell Biology	3
BIOL:3212	Bioinformatics for Beginners	3
BIOL:3233	Introduction to Developmental Biology	3
BIOL:3244	Animal Behavior	3
BIOL:3314	Genomics	3
BIOL:3343	Animal Physiology	3
MICR:3147	Immunology and Human Disease	3
MICR:3159	Bacteria and Human Disease	3
MICR:3168	Viruses and Human Disease	3

May include one of these:

BIOL:2753	Introduction to Neurobiology	3
PSY:2701	Introduction to Behavioral Neuroscience	4

Investigative Lab

Course #	Title	Hours
One of these:		
BIOL:3626	Cell Biology Laboratory	4
BIOL:3245	Animal Behavior Laboratory	4
BIOL:3656	Neurobiology Laboratory	4
BIOL:3676	Evolution Lab	4
BIOL:3716	Genetics and Biotechnology Lab	4
BIOL:3736	Developmental Biology Lab	4
MICR:3165	Genetics of Bacterial Pathogens Lab and Discussion	3

Experiential Learning

The objective of this requirement is to enrich the curriculum through efforts on a research project or other academic experience where a student pursues activities in the biomedical sciences.

Course #	Title	Hours
This course:		
BIOL:4898	Communicating Research	2
One of the following:		
BIOL:3994	Introduction to Research (taken twice for 2 s.h. each)	4
BIOL:4999	Honors Research in Biology (taken twice for 2 s.h. each)	4
An approved research course equivalent, such as HONR:4990.		4
Internships, paid hourly research work, or similar experiences conducted over at least two semesters ¹		0-4

¹ These activities may be used to satisfy the experiential learning requirement. They also may be used to fulfill the experiential learning requirement for the University of Iowa Honors Program. Students should discuss potential activities with academic advisors and, if necessary, obtain approval from the program director for a personalized plan to satisfy the requirement. A final summary of completed and in-progress experiential learning activities, including courses taken, fellowships received, appointments, presentations, and publications, among others, is required to evaluate completion.