Biomedical Sciences, BS

Requirements

The Bachelor of Science with a major in biomedical sciences requires a minimum of 120 s.h., including at least 79–81 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 must also complete the College of Liberal Arts and Sciences GE CLAS Core.

In planning coursework, students should be guided by the College of Liberal Arts and Sciences maximum hours rule: students earning a BS may apply a maximum of 56 s.h. earned in one department to the minimum 120 s.h. required for graduation, whether or not the coursework is accepted toward requirements for the major; students who earn more than 56 s.h. from one department may use the additional semester hours to satisfy requirements for the major (if the department accepts them), and the grades they earn become part of their grade-point average, but they cannot apply the additional semester hours to the minimum 120 s.h. required for graduation.

The interdisciplinary major in biomedical sciences provides an excellent foundation for medical training and 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, sport, 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.

Students who earn a major in biomedical sciences may not earn a major in biology (BA or BS).

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

Requirements	Hours
Required Courses	66-67
Elective Courses	13-14

Required Courses

Students complete the following coursework (66–67 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:2512	Fundamental Genetics	4
BIOL:3373	Human Population Genetics and Variation	3
HHP:2400	Fundamentals of Human Physiology	3
MICR:2157 & MICR:2158	General Microbiology and General Microbiology Laboratory (both courses should be taken in the same semester)	5

Mathematics

Course #	Title	Hours
One of these:		
MATH:1460	Calculus for the Biological Sciences	4
MATH:1550	Engineering Calculus I	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 and College Physics II	8
PHYS:1611 & PHYS:1612	Introductory Physics I and Introductory Physics 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 13–14 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:2753	Introduction to Neurobiology	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
BIOL:4123	Cell Biology of the Nervous System	3
MICR:3147	Immunology and Human Disease	3
MICR:3159	Bacteria and Human Disease	3
MICR:3168	Viruses and Human Disease	3

Investigative Lab

Course #	Title	Hours
One of these:		
BIOL:3245	Animal Behavior Laboratory	4
BIOL:3626	Cell Biology Laboratory	4
BIOL:3655	Neurogenetics 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
Choose from 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
Approved internships, paid hourly research work, or similar experiences conducted over at least two semesters		0-4

Approved internships, paid hourly research work, and similar experiences may be used to satisfy the experiential learning requirement. They may also 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.