

BACHELOR OF SCIENCE, MAJOR IN BIOMEDICAL SCIENCE

Major in Biomedical Sciences

The Biomedical Sciences degree offered by the Department of Biological Sciences provides a robust, yet flexible curriculum with an emphasis on studying the biological basis of health and disease. It is designed to thoroughly prepare students for entrance into medical, dental, pharmacy, physician assistant, and other professional schools, as well as graduate study in the biomedical sciences and employment as a laboratory research assistant. No minor is required for this degree.

Required Courses for the Major

The Biomedical Science Major must complete the following courses:

Course Requirements

BIOL 1411	General Botany	4
BIOL 1413	General Zoology	4
BIOL 2440	Introductory Cell Biology	4
BIOL 3450	Introductory Genetics	4
BIOL 3470	General Microbiology	4
BIOL 4361	Introductory Evolutionary Bio	3
CHEM 1411	General Chemistry I	4
CHEM 1412	General Chemistry II	4
CHEM 2323	Organic Chemistry I: Lecture	3
CHEM 2123	Organic Chemistry I Lab	1
CHEM 2325	Organic Chemistry II: Lecture	3
CHEM 2125	Organic Chemistry II: Lab	1
CHEM 3438	Biochemistry I	4
PHYS 1301	General Phy-Mechanics & Heat	3
PHYS 1101	General Physics Laboratory I	1
PHYS 1302	Gen Phy-Snd,Lght, Elec, & Mag	3
PHYS 1102	General Physics Laboratory II	1
MATH 1420	Calculus I	4
Select one of the following:		3-4
MATH 1430	Calculus II	
MATH 3379	Statistical Mthods In Practice	
BIOL 4374	Biostatistics	
Biomedical Sciences Elective		21-28
Total Hours		79-87

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Core Curriculum (catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum)

Component Area I (Communication)	6
Component Area II (Mathematics)	3
Component Area III (Life and Physical Science) (Courses for Science Majors)	8
Component Area IV (Language, Philosophy, and Culture)	3
Component Area V (Creative Arts)	3
Component Area VI (U.S. History)	6
Component Area VII (Political Science/Government)	6
Component Area VIII (Social and Behavioral Sciences)	3
Component Area IX (Component Area Option)	4

Degree Specific Requirements

MATH 1420	Calculus I	4
Select one of the following:		4
MATH 1430	Calculus II	
MATH 3379	Statistical Mthods In Practice	

STAT 3379	Statistical Methods In Practice	
CHEM 1411	General Chemistry I	4
CHEM 1412	General Chemistry II	4
CHEM 2323	Organic Chemistry I: Lecture	3
CHEM 2123	Organic Chemistry I Lab	1
CHEM 2325	Organic Chemistry II: Lecture	3
CHEM 2125	Organic Chemistry II: Lab	1
CHEM 3438	Biochemistry I	4
PHYS 1301	General Phy-Mechanics & Heat	3
PHYS 1101	General Physics Laboratory I	1
PHYS 1302	Gen Phy-Snd,Lght, Elec, & Mag	3
PHYS 1102	General Physics Laboratory II	1
Major Core		
BIOL 1411	General Botany	4
BIOL 1413	General Zoology	4
BIOL 2440	Introductory Cell Biology	4
BIOL 3450	Introductory Genetics	4
BIOL 3470	General Microbiology	4
BIOL 4361	Introductory Evolutionary Bio	3
Major Electives		
Select 31-32 SCH of the Biomedical Electives:		31-32
ANSC 3373	Animal Nutrition	
BIOL 3409	General Ecology	
BIOL 3420	Comparative Vertebrate Anatomy	
BIOL 3440	General Physiology	
BIOL 3460	Pathophysiology	
BIOL 3480	Vertebrate Embryology	
BIOL 3490	Histology	
BIOL 4410	General Entomology	
BIOL 4350	Immunology	
BIOL 4360	Genetic Anlys of Human Disease	
BIOL 4380	Medical Microbiology	
BIOL 4460	Parasitology	
BIOL 4480	Molecular Biology	
BIOL 4490	Cell Biology	
BIOL 4493	Endocrinology	
BIOL 4095	Undergrad Rsrch Tpcs-Biology	
CHEM 2401	Quantitative Analysis	
CHEM 3339	Biochemistry II	
COMS 2382	Comm. for Bus. & Professions ¹	
ENGL 3330	Intro To Technical Writing ¹	
HLTH 2372	Health & Medical Terminology ¹	
PSYC 3331	Abnormal Psychology ¹	
PSYC 3374	Development Psychology ¹	
Total Hours		120-121

¹ No more than two of these courses may be applied toward the Biomedical Sciences degree. Students should consult with an academic advisor in the Biological Sciences early in their degree program regarding appropriate choices for their electives.

Note

This total reflects MATH 1420 satisfying Component Area II and one hour of Component Area IX, and BIOL 1411 and BIOL 1413 satisfying Component Area III.

Teacher Certification in the Life Sciences

Biology & Biomedical Sciences Majors

Students may receive teacher certification in the Life Sciences for grades 8-12 by pairing a major in Biology (BS only as outlined above) with a Secondary Teacher Certification from the Department of Curriculum and Instruction. Students pursuing this degree combination should include BIOL 3492 as one of their advanced biology electives.

For students seeking a Secondary Teacher Certification in the Life Sciences, no grade below C in the science coursework in BIOL is accepted. The required education courses are:

Code	Title	Hours
Course Requirements		
CISE 3384	The Teaching Profession	3
CISE 4374	Human Growth and Learning	3
CISE 4364	Mth Tch Secondary Schools	3
CISE 4377	Assmt Stdnt Lrng In Secondary	3
CISE 4394	Creatng Env For Lrng-Secondary	3
CISE 4396	Std Tch Secondary Classroom	3
CISE 4397	Std Tch Secondary Classroom	3
READ 4320	Content Area Reading & Writing	3
Total Hours		24
First Year		
Fall	Hours Spring	Hours
ENGL 1301 ¹	3 ENGL 1302 ¹	3
BIOL 1411 or 1413 ²	4 BIOL 1411 or 1413 ²	4
CHEM 1411	4 CHEM 1412	4
Component Area IV (catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiv)	3 MATH 1420 ³	4
		14
		15
Second Year		
Fall	Hours Spring	Hours
BIOL 2440	4 Biology Core	4
MATH 1430, 3379, or STAT 3379	4 BIOL 3450	
Component Area V (catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareav)	3 BIOL 3470	
HIST 1301 ⁴	3 HIST 1302 ⁴	3
CHEM 2323 & CHEM 2123	4 Component Area IX (catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaix)	3
		POLS 2305 ⁵
		3
		CHEM 2325
		4
		& CHEM 2125
		18
		17
Third Year		
Fall	Hours Spring	Hours
Biology Core	4 BIOL 4361	3
BIOL 3450	Component Area VIII (catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaviii)	3
BIOL 3470	PHYS 1302 & PHYS 1102	4
POLS 2306 ⁵	3 Biomedical Elective	4

PHYS 1301 & PHYS 1101	4	
CHEM 3438	4	
	15	14
Fourth Year		
Fall	Hours Spring	Hours
Biomedical Electives	13 Biomedical Electives	14
	13	14

Total Hours: 120

- 1 Satisfies Component Area I
- 2 Satisfies Component Area III
- 3 Satisfies Component Area II
- 4 Satisfies Component Area VI
- 5 Satisfies Component Area VII