

BACHELOR OF SCIENCE IN BIOCHEMISTRY (PRE-HEALTH MAJORS)

Total Semester Credit Hours (sch): 120-125

Major: 78 sch

BIOCHEMISTRY.BS CIP Code: 26.0202.00

General Description

This degree prepares students for graduate work in biochemistry, for careers in the chemical/pharmaceutical industries, and is ideal for admission to medically-related professional programs. This degree offers flexibility for students in the upper division courses so they can tailor their program to their individual professional goals. For those more interested in medically related programs, students would choose upper division biology courses, whereas those more interested in graduate work in biochemistry would choose upper division chemistry courses.

Degree Requirements

Texas Core Curriculum

Code	Title	SCHs
ENG 1013	Composition I	3
ENG 1023	Composition II	3
Mathematics		3
Life & Physical Sciences		6
Language, Philosophy, & Culture		3
Creative Arts		3
HIST 1013	History of the United States, 1492-1865	3
HIST 1023	History of the United States, 1865 to the Present	3
GOV 2013	U.S. National Government	3
GOV 2023	Texas Government	3
Social & Behavioral Sciences		3
CAO: Women's Studies		3
CAO: First Year Seminar, Wellness or Mathematics		3
Total SCHs		42

Courses Required for Major

Code	Title	SCHs
CHEM 1001	Horizons of Chemistry and Biochemistry I: Career Possibilities	1
CHEM 1101	Horizons of Chemistry and Biochemistry II: Current Applications	1
CHEM 1213 & CHEM 1211	Principles of Chemistry I and Principles of Chemistry Laboratory I	4
CHEM 1223 & CHEM 1221	Principles of Chemistry II and Principles of Chemistry Laboratory II	4
CHEM 2213 & CHEM 2211	Organic Chemistry I and Organic Chemistry Laboratory I	4
CHEM 3223 & CHEM 3221	Organic Chemistry II and Organic Chemistry Laboratory II	4
CHEM 3313	Physical Chemistry for the Life Sciences	3

CHEM 3633 & CHEM 3632	Biochemistry I and Biochemistry I Laboratory	5
CHEM 3333 & CHEM 3331	Quantitative Chemical Analysis and Quantitative Chemical Analysis Laboratory	4
CHEM 3643	Biochemistry II	3
CHEM 4001	Research Presentations in Chemistry and Biochemistry	1
Total SCHs		34

Other Requirements

Code	Title	SCHs
MATH 2014	Calculus I	4
MATH 2024	Calculus II	4
BIOL 1113 & BIOL 1111	Principles of Biology I and Principles of Biology I Laboratory	4
BIOL 1123 & BIOL 1121	Principles of Biology II and Principles of Biology II Laboratory	4
PHYS 2153 & PHYS 2151	General Physics I and General Physics Laboratory I (may be applied from core)	4
PHYS 2163 & PHYS 2161	General Physics II and General Physics Laboratory II (may be applied from core)	4
Choose one course from:		3-4
BIOL 4223 & BIOL 4221	Ecology and Ecology Laboratory	
BIOL 4823 & BIOL 4821	Molecular and Cellular Biology: Genetics and Inheritance and Molecular and Cellular Biology: Genetics and Inheritance Laboratory	
BIOL 4813 & BIOL 4811	Molecular and Cellular Biology: Gene Expression and Molecular and Cellular Biology: Gene Expression Laboratory	
BACT 3113 & BACT 3111	General Microbiology and General Microbiology Laboratory	
ZOOL 4243 & ZOOL 4241	Mammalian Physiology and Mammalian Physiology Laboratory	
Total SCHs		27-28

Electives

Code	Title	SCHs
Choose 16-17 sch not already taken		16-17
CHEM 3413 & CHEM 3411	Physical Chemistry I and Physical Chemistry Laboratory I	
Global Perspectives Course (see advisor for selection)		
CHEM 3423 & CHEM 3421	Physical Chemistry II and Physical Chemistry Laboratory II	
CHEM 4983	Undergraduate Research	
CHEM 4313 & CHEM 4311	Instrumental Analysis and Instrumental Analysis Laboratory	
CHEM 4513 & CHEM 4511	Inorganic Chemistry and Inorganic Chemistry Laboratory	
CHEM 4913	Independent Study	

BIOL 4223 & BIOL 4221	Ecology and Ecology Laboratory			BIOL 1123	Principles of Biology II	BIOL 1307	3
BIOL 4823 & BIOL 4821	Molecular and Cellular Biology: Genetics and Inheritance and Molecular and Cellular Biology: Genetics and Inheritance Laboratory			Multicultural Women's Studies CAO Core			3
BIOL 4813 & BIOL 4811	Molecular and Cellular Biology: Gene Expression and Molecular and Cellular Biology: Gene Expression Laboratory			SCHs			16
BACT 3113 & BACT 3111	General Microbiology and General Microbiology Laboratory			Second Year			
ZOOL 4243 & ZOOL 4241	Mammalian Physiology and Mammalian Physiology Laboratory			Fall			
						TCCN	
				CHEM 2211	Organic Chemistry Laboratory I	CHEM 2123	1
				CHEM 2213	Organic Chemistry I	CHEM 2323	3
				PHYS 2151	General Physics Laboratory I	PHYS 2125	1
				PHYS 2153	General Physics I	PHYS 2325	3
				HIST 1013	History of the United States, 1492-1865	HIST 1301	3
				ENG 1013	Composition I	ENGL 1301	3

Total SCHs 16-17

Plan of Study

First Year

Fall		TCCN	SCHs	Spring		TCCN	SCHs
CHEM 1001	Horizons of Chemistry and Biochemistry I: Career Possibilities		1	CHEM 3221	Organic Chemistry Laboratory II		1
CHEM 1211	Principles of Chemistry Laboratory I		1	CHEM 3223	Organic Chemistry II		3
CHEM 1213	Principles of Chemistry I		3	PHYS 2161	General Physics Laboratory II	PHYS 2126	1
MATH 2014	Calculus I	MATH 2413	4	PHYS 2163	General Physics II	PHYS 2326	3
BIOL 1111	Principles of Biology I Laboratory	BIOL 1106	1	ENG 1023	Composition II	ENGL 1302	3
BIOL 1113	Principles of Biology I	BIOL 1306	3	CHEM 3333	Quantitative Chemical Analysis		3
UNIV 1231	Learning Frameworks: The First Year Experience	EDUC 1100, EDUC 1200, EDUC 1300	1	CHEM 3331	Quantitative Chemical Analysis Laboratory		1
Wellness/Math CAO Core			2	SCHs			15
SCHs			16	Third Year			

Spring		TCCN	SCHs	Fall		TCCN	SCHs
CHEM 1101	Horizons of Chemistry and Biochemistry II: Current Applications		1	CHEM 3632	Biochemistry I Laboratory		2
CHEM 1221	Principles of Chemistry Laboratory II		1	CHEM 3633	Biochemistry I		3
CHEM 1223	Principles of Chemistry II		3	BIOL 3XXX or 4XXX			4
MATH 2024 or 4013	Calculus II	MATH MATH 2414	4	GOV 2013	U.S. National Government	GOVT 2305	3
BIOL 1121	Principles of Biology II Laboratory	BIOL 1107	1	Elective			4
				SCHs			16
				Spring			
						TCCN	
				CHEM 3313	Physical Chemistry for the Life Sciences		3
				CHEM 3643	Biochemistry II		3
				CHEM 4983	Undergraduate Research		3

Elective (GP)			3
GOV 2023	Texas Government	GOVT 2306	3
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	SCHs		15
Fourth Year			
Fall		TCCN	
Elective			3
CHEM 4983	Undergraduate Research		3
Creative Arts Core			3
Language, Philosophy, and Culture Core			3
Elective			2
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	SCHs		14
Spring		TCCN	
CHEM 4001	Research Presentations in Chemistry and Biochemistry		1
HIST 1023	History of the United States, 1865 to the Present	HIST 1302	3
Elective - Upper Level			4
Elective			3
Social & Behavioral Science Core			3
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	SCHs		14
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	Total SCHs:		120

(GP) courses satisfy global perspectives graduation requirement.