

BACHELOR OF SCIENCE IN BIOLOGY (PRE-MED)

Web Site: <https://twu.edu/biology/undergraduate-programs/bachelor-of-science-in-biology-for-pre-health-professions/>

Our bachelor's degree in Biology (Pre-Medicine track) is your first step toward a career as a health professional. During our four-year program, you will develop a comprehensive understanding of the principles of biology, chemistry, physics, physiology, microbiology, molecular biology, and cellular biology. **The broad background provided by our bachelor's degree provides excellent preparation for those seeking admission into medical, dental, and veterinary programs.** The curriculum is designed to meet all course prerequisites for medical school and also provides a strong foundation for preparing for the MCAT (Medical College Admissions Test). Students on this track are encouraged to visit the Pre-Health Resources (<https://twu.edu/arts-sciences/pre-health-resources/>) site to learn more about medical school admissions procedures, shadowing and internship opportunities, writing your personal statement, and other valuable guidance and information.

Marketable Skills

Defined by the Texas Higher Education Coordinating Board's 60x30 Strategic Plan (<https://reportcenter.highered.texas.gov/agency-publication/miscellaneous/the60x30-strategic-plan/>) as, "Those skills valued by employers that can be applied in a variety of work settings, including interpersonal, cognitive, and applied skills areas. These skills can be either primary or complementary to a major and are acquired by students through education, including curricular, co-curricular, and extracurricular activities."

1. Written and oral communication skills.
2. Demonstrate critical thinking by using logic and reasoning to interpret scientific results.
3. Ability to design and conduct properly controlled experiments.
4. Utilize modern scientific instruments and methods.
5. Work collaboratively as part of a team to perform, analyze, and present research.
6. Ability to understand and comply with laboratory safety guidelines.
7. Appreciate the requirements for a successful career in the health professions.

Admissions

All applicants must meet the general undergraduate admission requirements (<https://catalog.twu.edu/undergraduate/admission-information/>).

Degree Requirements

Total Semester Credit Hours (SCH): 120

Major: 28 SCH

Program Code: BIOLOGY.BS.PREMED; **CIP Code:** 26.0101.00

Lecture and lab must be taken concurrently. A minimum grade of C is mandatory in all required courses for Biology majors.

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
POLS 2013	U.S. National Government	3
POLS 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
BACT 3113 & BACT 3111	General Microbiology and General Microbiology Laboratory	4
BIOL 4813 & BIOL 4811	Molecular and Cellular Biology: Gene Expression and Molecular and Cellular Biology: Gene Expression Laboratory	4
BIOL 4823 & BIOL 4821	Molecular and Cellular Biology: Genetics and Inheritance and Molecular and Cellular Biology: Genetics and Inheritance Laboratory	4
ZOOL 4243 & ZOOL 4241	Medical Physiology and Medical Physiology Laboratory	4
BIOL 4681	Biology Seminar	1
Biology Electives from BACT, BIOL, or ZOOL		11
Biology Elective hours must include coursework appropriate for science majors. The following courses are not acceptable electives: BACT 1003/BACT 1001, BIOL 1013, BIOL 1023, BIOL 1033, BIOL 1223, ZOOL 2013/ZOOL 2011, and ZOOL 2023/ZOOL 2021.		
Total SCHs		28

Departmental Requirements

Code	Title	SCHs
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
Choose one of the following:		4
CHEM 1113 & CHEM 1111	General Chemistry I and General Chemistry Laboratory I	
CHEM 1213 & CHEM 1211	Principles of Chemistry I and Principles of Chemistry Laboratory I	
Choose one of the following:		4
CHEM 1123 & CHEM 1121	General Chemistry II and General Chemistry Laboratory II	

CHEM 1223 & CHEM 1221	Principles of Chemistry II and Principles of Chemistry Laboratory II	
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 3633 & CHEM 3632	Biochemistry I and Biochemistry I Laboratory	5
MATH 1303 or MATH 2014	College Algebra Calculus I	3-4
MATH 1703	Elementary Statistics I	3
PSY 1013	Introduction to General Psychology	3
Select one of the following		3
PSY 1603	Developmental Psychology	
PSY 2513	Abnormal Psychology	
SOCI 1013	Introductory Sociology	3
Choose one of the following:		4
PHYS 1133 & PHYS 1131	Principles of Physics I and Principles of Physics Laboratory I	
PHYS 2153 & PHYS 2151	General Physics I and General Physics Laboratory I	
Choose one of the following:		4
PHYS 1143 & PHYS 1141	Principles of Physics II and Principles of Physics Laboratory II	
PHYS 2163 & PHYS 2161	General Physics II and General Physics Laboratory II	
Electives - Choose two of the following:		6
HDFS 4543	Developmental Sexuality	
HS 2373	Health Aspects of Human Sexuality	
HS 3033	Medical Terminology	
NFS 2323	Introduction to Nutrition	
PHIL 3073	Bioethics	
SPAN 1013	Elementary Spanish I	
SPAN 1023	Elementary Spanish II	

Total SCHs **58-59**

Students must satisfy the 3 SCH global perspectives graduation requirement.

Recommended Plan of Study

First Year

Fall	TCCN	SCHs
BIOL 1113 & BIOL 1111	Principles of Biology I and Principles of Biology I Laboratory	BIOL 1406 & BIOL 1106 4
CHEM 1113 & CHEM 1111	General Chemistry I and General Chemistry Laboratory I	CHEM 1311 & CHEM 1111 4
MATH 1303	College Algebra	MATH 1314 3
ENG 1013	Composition I	ENGL 1301 3
UNIV 1231	Learning Frameworks: First-Year Seminar	EDUC 1100, EDUC 1200, EDUC 1300 1

SCHs **15**

Spring	TCCN
BIOL 1123 & BIOL 1121	Principles of Biology II and Principles of Biology II Laboratory BIOL 1407 & BIOL 1107 4
CHEM 1123 & CHEM 1121	General Chemistry II and General Chemistry Laboratory II CHEM 1312 & CHEM 1112 4
MATH 1703	Elementary Statistics I MATH 1342 3
PSY 1013	Introduction to General Psychology PSYC 2301 3
ENG 1023	Composition II ENGL 1302 3
SCHs 17	

Second Year

Fall	TCCN
CHEM 2213 & CHEM 2211	Organic Chemistry I and Organic Chemistry Laboratory I CHEM 2323 & CHEM 2123 4
PHYS 1133 & PHYS 1131	Principles of Physics I and Principles of Physics Laboratory I PHYS 1301 & PHYS 1101 4
Choose one of the following	
PSY 1603	Developmental Psychology PSYC 2314
PSY 2513	Abnormal Psychology PSYC 2320
POLS 2013	U.S. National Government GOVT 2305 3
SCHs 14	

Spring	TCCN
BACT 3113 & BACT 3111	General Microbiology and General Microbiology Laboratory 4
CHEM 3223 & CHEM 3221	Organic Chemistry II and Organic Chemistry Laboratory II 4
PHYS 1143 & PHYS 1141	Principles of Physics II and Principles of Physics Laboratory II PHYS 1302 & PHYS 1102 4
POLS 2023	Texas Government GOVT 2306 3
SCHs 15	

Third Year

Fall	TCCN
BIOL 4813 & BIOL 4811	Molecular and Cellular Biology: Gene Expression and Molecular and Cellular Biology: Gene Expression Laboratory 4
CHEM 3633 & CHEM 3632	Biochemistry I and Biochemistry I Laboratory 5
PHIL 3073	Bioethics 3
SOCI 1013	Introductory Sociology SOCI 1301 3
SCHs 15	
Spring	TCCN
BIOL 4823 & BIOL 4821	Molecular and Cellular Biology: Genetics and Inheritance and Molecular and Cellular Biology: Genetics and Inheritance Laboratory 4
ZOOL 4243 & ZOOL 4241	Medical Physiology and Medical Physiology Laboratory 4
Multicultural Women's Studies CAO Core	3

Creative Arts Core			3
SCHs			14
Fourth Year			
Fall		TCCN	
BIOL 4681	Biology Seminar		1
HIST 1013	History of the United States, 1492-1865	HIST 1301	3
Biology Elective			3
Biology Elective			4
Upper-level General Elective			3
SCHs			14
Spring		TCCN	
HIST 1023	History of the United States, 1865 to the Present	HIST 1302	3
Biology Elective			4
Upper-level General Elective			3
Upper-level General Elective			3
Elective			3
SCHs			16
Total SCHs:			120