

BACHELOR OF SCIENCE IN BIOLOGY (7-12 SCIENCE CERTIFICATION)

The Department of Biology offers a degree in Biology which also includes the courses and requirements leading to completion of a Texas 7-12 Science Teaching Certificate. This Bachelor of Science degree leading to teacher certification requires a total of 134-142 semester credit hours.

All students pursuing teacher certification must achieve an overall GPA of at least 2.75 prior to enrolling in professional education coursework.

Students must earn a grade of C or better in all required mathematics, science (includes all prefixes) and education courses

The requirements for Biology majors in mathematics, chemistry, and physics must also be met. Completion of teacher education requirements will automatically lead to a minor in education.

Total Semester Credit Hours (sch): 134-142

Major: 36 sch Required Minor: 26 sch

Program Code: BIOLOGY.BS CIP Code: 26.0101

Admissions:

Please refer to the Admission section of this catalog regarding acceptance into TWU.

To obtain acceptance into the undergraduate Educator Preparation Program, you must have:

(All criteria required before taking EDUC 3003, EDUC 3482, EDUC 4113, EDUC 4243, and Clinical Student Teaching)

- Completion of EDUC 2003 (C or better)
- Cumulative GPA of 2.75
- Demonstrate basic skills in reading, written communication, and mathematics by meeting the requirements of the Texas Success Initiative;
- Testing Requirements (please note: all testing requirements are subject to change)
 - TASP/THEA Scores: Reading 260, Math 240, Writing 240; OR
 - Accuplacer Scores: Reading 80, Math 65, Writing 82/6; OR
 - ACT Scores: Verbal 19, Math 19, Composite 23; OR
 - SAT Scores:
 - Prior to March 5, 2016 - Verbal 500, Math 500, Composite 1070;
 - On/After March 5, 2016 – EBRW 480, Math 530

ACT and SAT scores cannot be more than five years old

- Successful completion of a pre-admission interview with assigned faculty advisor
- Minimum of 12 to 15 semester credit hours in the subject-specific content area for the certification sought
- Signed application for admission to the Educator Preparation Program
- Signed Commitment Contract acknowledging awareness and understanding of the Dispositions Policy and Educators' Code of Ethics

- Submit a non-refundable Texas Education Agency Fee
- Acknowledgment and acceptance of admission to the Educator Preparation Program

Students must maintain the admission requirements to remain a student in the TWU Education Preparation Program.

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
BIOL 1113	Principles of Biology I	3
BIOL 1111	Principles of Biology I Laboratory	1
BIOL 1123	Principles of Biology II	3
BIOL 1121	Principles of Biology II Laboratory	1
BIOL 4681	Biology Seminar	1
BACT 3111 & BACT 3113	General Microbiology Laboratory and General Microbiology	4
ZOOL 4241 & ZOOL 4243	Mammalian Physiology Laboratory and Mammalian Physiology	4
BOT 2111 & BOT 2113	Plant Biology Laboratory and Plant Biology	4
BIOL 4811 & BIOL 4813	Molecular and Cellular Biology: Gene Expression Laboratory and Molecular and Cellular Biology: Gene Expression	4
BIOL 4821 & BIOL 4823	Molecular and Cellular Biology: Genetics and Inheritance Laboratory and Molecular and Cellular Biology: Genetics and Inheritance	4
BIOL 4223 & BIOL 4221	Ecology and Ecology Laboratory (GP)	4
BIOL 4593	Science in the Secondary Classroom	3
Total SCHs		36

Additional Required Courses

Code	Title	SCHs				
CHEM 1113	General Chemistry I	3	CHEM 1111 & CHEM 1113	General Chemistry Laboratory I and General Chemistry I	(CHEM 1111) and (CHEM 1311)	4
CHEM 1111	General Chemistry Laboratory I	1				
CHEM 1123	General Chemistry II	3	MATH 1303	Elementary Analysis I	MATH 1314	3
CHEM 1121	General Chemistry Laboratory II	1	ENG 1013	Composition I	ENGL 1301	3
CHEM 2213	Organic Chemistry I	3	UNIV 1231	Learning Frameworks: The First Year Experience	EDUC 1100, EDUC 1200, EDUC 1300	1
CHEM 2211	Organic Chemistry Laboratory I	1				
CHEM 3223	Organic Chemistry II	3				
CHEM 3221	Organic Chemistry Laboratory II	1				
PHYS 1133 & PHYS 1131	Principles of Physics I and Principles of Physics Laboratory I (may be applied from core)	4				
PHYS 1143 & PHYS 1141	Principles of Physics II and Principles of Physics Laboratory II (may be applied from core)	4				
SCI 2113	Earth Science I	3				
MATH 1303	Elementary Analysis I (may be applied from core)	3				
MATH 1313	Elementary Analysis II (may be applied from core)	3				
Choose one of the following:		4-5				
CHEM 3633 & CHEM 3632	Biochemistry I and Biochemistry I Laboratory					
CHEM 3333 & CHEM 3331	Quantitative Chemical Analysis and Quantitative Chemical Analysis Laboratory					
Total SCHs		37-38				
Education Minor						

Code	Title	SCHs
EDUC 2003	Schools and Society	3
EDUC 3003	Learning Theory and Development	3
EDUC 3482	Teaching Diverse Learners Through Technology Integration	2
EDUC 4113	Design and Implementation of Instruction and Assessment	3
EDSP 4203	Learners with Exceptionalities	3
EDUC 4243	Classroom Environment and Management	3
EDUC 4066	Student Teaching: General Science	6
READ 3013	Literacy and Learning across the Curriculum	3
Total SCHs		26

(GP) Satisfies global perspectives graduation requirement.

Plan of Study

First Year

Fall		TCCN	SCHs
BIOL 1111 & BIOL 1113	Principles of Biology I Laboratory and Principles of Biology I	(BIOL 1106) and (BIOL 1306)	4

Spring		TCCN	SCHs
BIOL 1121 & BIOL 1123	Principles of Biology II Laboratory and Principles of Biology II	(BIOL 1107) and (BIOL 1307)	4
CHEM 1121 & CHEM 1123	General Chemistry Laboratory II and General Chemistry II	(CHEM 1112) and (CHEM 1312)	4
MATH 1313	Elementary Analysis II	MATH 1316	3
ENG 1023	Composition II	ENGL 1302	3
Multicultural Women's Studies Core		CAO	3
			17

Second Year

Fall		TCCN	SCHs
CHEM 2211 & CHEM 2213	Organic Chemistry Laboratory I and Organic Chemistry I	(CHEM 2123) and (CHEM 2323)	4
BOT 2111 & BOT 2113	Plant Biology Laboratory and Plant Biology	(BIOL 1111) and (BIOL 1311)	4
BACT 3111 & BACT 3113	General Microbiology Laboratory and General Microbiology		4
GOV 2013	U.S. National Government	GOVT 2305	3
EDUC 2003	Schools and Society	EDUC 1301	3
			18
Spring		TCCN	SCHs
CHEM 3221 & CHEM 3223	Organic Chemistry Laboratory II and Organic Chemistry II		4

BIOL 4221 & BIOL 4223 (GP)	Ecology Laboratory and Ecology		4	EDUC 4243	Classroom Environment and Management		3
ZOOL 4241 & ZOOL 4243	Mammalian Physiology Laboratory and Mammalian Physiology		4	READ 3013	Literacy and Learning across the Curriculum		3
				EDSP 4203	Learners with Exceptionalities		3
GOV 2023	Texas Government	GOVT 2306	3			SCHs	20
Creative Arts Core			3	Fourth Year			
	SCHs		18	Fall		TCCN	
Third Year				CHEM 3633 & CHEM 3632	Biochemistry I and Biochemistry I Laboratory		5
Fall		TCCN		BIOL 4593	Science in the Secondary Classroom		3
BIOL 4811 & BIOL 4813	Molecular and Cellular Biology: Gene Expression Laboratory and Molecular and Cellular Biology: Gene Expression		4	SCI 2113	Earth Science I	GEOL 1401	3
				BIOL 4681	Biology Seminar		1
PHYS 1131 & PHYS 1133	Principles of Physics I and Principles of Physics I	(PHYS 1101) and (PHYS 1301)	4	HIST 1023	History of the United States, 1865 to the Present	HIST 1302	3
					Language, Philosophy & Culture Core		3
HIST 1013	History of the United States, 1492-1865	HIST 1301	3	EDSP 4203	Learners with Exceptionalities		3
Social/Behavioral Science Core			3			SCHs	21
EDUC 3003	Learning Theory and Development		3	Spring		TCCN	
EDUC 3482	Teaching Diverse Learners Through Technology Integration		2	EDUC 4066	Student Teaching: General Science		6
						SCHs	6
						Total SCHs:	134
	SCHs		19	(GP) courses satisfy global perspectives graduation requirement.			
Spring		TCCN					
BIOL 4821 & BIOL 4823	Molecular and Cellular Biology: Genetics and Inheritance Laboratory and Molecular and Cellular Biology: Genetics and Inheritance		4				
PHYS 1141 & PHYS 1143	Principles of Physics II and Principles of Physics II	(PHYS 1102) and (PHYS 1302)	4				
EDUC 4113	Design and Implementation of Instruction and Assessment		3				