

# B.S. IN CHEMISTRY/ BIOCHEMISTRY (7-12 COMPOSITE SCIENCE TEACHER CERTIFICATION)

**Total Semester Credit Hours (sch): 124-133**

**Major: 36 sch      Required Minor: 26 sch**

CHEMISTRY.BS      CIP Code: 40.0501.00

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
<b>Total SCHs</b>		<b>42</b>

Courses Required for Major

Code	Title	SCHs
CHEM 1113 & CHEM 1111	General Chemistry I and General Chemistry Laboratory I	4
CHEM 1123 & CHEM 1121	General Chemistry II and General 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 3331	Quantitative Chemical Analysis Laboratory	1
CHEM 3333	Quantitative Chemical Analysis	3
PHYS 1133 & PHYS 1131	Principles of Physics I and Principles of Physics Laboratory I	4
PHYS 1141	Principles of Physics Laboratory II	1
PHYS 1143	Principles of Physics II	3
<b>Total SCHs</b>		<b>36</b>

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 4036	Student Teaching: Chemistry	6
READ 3013	Literacy and Learning across the Curriculum	3
<b>Total SCHs</b>		<b>26</b>

Other Requirements

Code	Title	SCHs	Sophomore	TCCN
BIOL 4593	Science in the Secondary Classroom	3	<b>Fall</b>	
BIOL 4223 & BIOL 4221	Ecology and Ecology Laboratory	4	CHEM 2213	Organic Chemistry I CHEM 2323 3
SCI 2103	Introduction to Environmental Chemistry: Global Perspectives (GP)	3	CHEM 2211	Organic Chemistry Laboratory I CHEM 2123 1
SCI 2113	Earth Science I	3		
MATH 2014	Calculus I (may be applied from core)	4	PHYS 1133	Principles of Physics I PHYS 1301 3
BIOL 1113 & BIOL 1111	Principles of Biology I and Principles of Biology I Laboratory (may be applied from core)	4	PHYS 1131	Principles of Physics Laboratory I PHYS 1101 1
BIOL 1123 & BIOL 1121	Principles of Biology II and Principles of Biology II Laboratory (may be applied from core)	4	GOV 2013	U.S. National Government GOVT 2305 3
ZOOL 4243 & ZOOL 4241	Mammalian Physiology and Mammalian Physiology Laboratory	4	Creative Arts Core	
Total SCHs		29	Language, Philosophy, & Culture Core	3

(GP) Satisfies global perspectives graduation requirement.

## Plan of Study

### Freshman

Fall	TCCN	SCHs	Spring	TCCN
CHEM 1113	General Chemistry I CHEM 1311	3	CHEM 3223	Organic Chemistry II 3
CHEM 1111	General Chemistry Laboratory I CHEM 1111	1	CHEM 3221	Organic Chemistry Laboratory II 1
Social/Behavioral Science Core		3	PHYS 1143	Principles of Physics II PHYS 1302 3
BIOL 1113	Principles of Biology I BIOL 1306	3	PHYS 1141	Principles of Physics Laboratory II PHYS 1102 1
BIOL 1111	Principles of Biology I Laboratory BIOL 1106	1	GOV 2023	Texas Government GOVT 2306 3
ENG 1013	Composition I ENGL 1301	3	CHEM 3331	Quantitative Chemical Analysis Laboratory 1
UNIV 1231	Learning Frameworks: The First Year Experience EDUC 1100, EDUC 1200, EDUC 1300	1	CHEM 3333	Quantitative Chemical Analysis 3
Wellness/Mathematics CAO Core		2	SCHs	15
<b>Spring</b>	<b>TCCN</b>		<b>Junior</b>	
CHEM 1123	General Chemistry II CHEM 1312	3	<b>Fall</b>	<b>TCCN</b>
CHEM 1121	General Chemistry Laboratory II CHEM 1112	1	EDUC 2003	Schools and Society EDUC 1301 3
MATH 2014	Calculus I MATH 2413	4	BIOL 4593	Science in the Secondary Classroom 3
BIOL 1123	Principles of Biology II BIOL 1307	3	CHEM 3633	Biochemistry I 3
BIOL 1121	Principles of Biology II Laboratory BIOL 1107	1	CHEM 3632	Biochemistry I Laboratory 2
Multicultural Women's Studies CAO		3	SCI 2103 (GP)	Introduction to Environmental Chemistry: Global Perspectives ENVR 1401 3
ENG 1023	Composition II ENGL 1302	3	SCHs	14
SCHs		18		

<b>Spring</b>		<b>TCCN</b>	
EDUC 3003	Learning Theory and Development		3
EDUC 3482	Teaching Diverse Learners Through Technology Integration		2
BIOL 4223	Ecology		3
BIOL 4221	Ecology Laboratory		1
ZOOL 4243	Mammalian Physiology		3
ZOOL 4241	Mammalian Physiology Laboratory		1
CHEM 3313	Physical Chemistry for the Life Sciences		3
HIST 1013	History of the United States, 1492-1865	HIST 1301	3
SCHs			19
<b>Senior</b>		<b>TCCN</b>	
<b>Fall</b>		<b>TCCN</b>	
HIST 1023	History of the United States, 1865 to the Present	HIST 1302	3
EDUC 4113	Design and Implementation of Instruction and Assessment		3
EDUC 4243	Classroom Environment and Management		3
SCI 2113	Earth Science I	GEOL 1401	3
EDSP 4203	Learners with Exceptionalities		3
READ 3013	Literacy and Learning across the Curriculum		3
SCHs			18
<b>Spring</b>		<b>TCCN</b>	
EDUC 4036	Student Teaching: Chemistry		6
SCHs			6
Total SCHs:			124

(GP) Satisfies global perspectives graduation requirement.