

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 | Semester Credit Hours |
|--|---|-----------------------|
| 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 Semester Credit Hours | | 42 |

Courses Required for Major

| Code | Title | Semester Credit Hours |
|------------------------------------|--|-----------------------|
| 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 |
| Total Semester Credit Hours | | 36 |

Education Minor

| Code | Title | Semester Credit Hours |
|-----------|--|-----------------------|
| 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 | BIOL 1123 | Principles of Biology II | BIOL 1307 | 3 |
| Total Semester Credit Hours | | 26 | BIOL 1121 | Principles of Biology II Laboratory | BIOL 1107 | 1 |
| Other Requirements | | | | | | |
| Code | Title | Semester Credit Hours | | | | |
| BIOL 4593 | Science in the Secondary Classroom | 3 | Multicultural Women's Studies CAO | | | 3 |
| BIOL 4223 & BIOL 4221 | Ecology and Ecology Laboratory | 4 | ENG 1023 | Composition II | ENGL 1302 | 3 |
| SCI 2103 | Introduction to Environmental Chemistry: Global Perspectives (GP) | 3 | Semester Credit Hours | | | 18 |
| SCI 2113 | Earth Science I | 3 | Sophomore Fall | | TCCN | |
| MATH 2014 | Calculus I (may be applied from core) | 4 | CHEM 2213 | Organic Chemistry I | CHEM 2323 | 3 |
| BIOL 1113 & BIOL 1111 | Principles of Biology I and Principles of Biology I Laboratory (may be applied from core) | 4 | CHEM 2211 | Organic Chemistry Laboratory I | CHEM 2123 | 1 |
| BIOL 1123 & BIOL 1121 | Principles of Biology II and Principles of Biology II Laboratory (may be applied from core) | 4 | PHYS 1133 | Principles of Physics I | PHYS 1301 | 3 |
| ZOOL 4243 & ZOOL 4241 | Mammalian Physiology and Mammalian Physiology Laboratory | 4 | PHYS 1131 | Principles of Physics Laboratory I | PHYS 1101 | 1 |
| Total Semester Credit Hours | | 29 | GOV 2013 | U.S. National Government | GOVT 2305 | 3 |
| (GP) Satisfies global perspectives graduation requirement. | | | Creative Arts Core | | | 3 |
| | | | Language, Philosophy, & Culture Core | | | 3 |

| | | | | | | |
|--------------------------------|--|---------------------------------|------------------------------|------------------------------|---|-------------|
| Freshman Fall | | TCCN | Semester Credit Hours | Semester Credit Hours | | 17 |
| CHEM 1113 | General Chemistry I | CHEM 1311 | 3 | Spring | TCCN | |
| CHEM 1111 | General Chemistry Laboratory I | CHEM 1111 | 1 | CHEM 3223 | Organic Chemistry II | 3 |
| Social/Behavioral Science Core | | | 3 | CHEM 3221 | Organic Chemistry Laboratory II | 1 |
| BIOL 1113 | Principles of Biology I | BIOL 1306 | 3 | PHYS 1143 | Principles of Physics II | 3 |
| BIOL 1111 | Principles of Biology I Laboratory | BIOL 1106 | 1 | PHYS 1141 | Principles of Physics Laboratory II | 1 |
| ENG 1013 | Composition I | ENGL 1301 | 3 | GOV 2023 | Texas Government | 3 |
| UNIV 1231 | Learning Frameworks: The First Year Experience | EDUC 1100, EDUC 1200, EDUC 1300 | 1 | CHEM 3331 | Quantitative Chemical Analysis Laboratory | 1 |
| Wellness/Mathematics CAO Core | | | 2 | CHEM 3333 | Quantitative Chemical Analysis | 3 |
| Semester Credit Hours | | | 17 | Semester Credit Hours | | 15 |
| Spring | | TCCN | | Junior Fall | | TCCN |
| CHEM 1123 | General Chemistry II | CHEM 1312 | 3 | EDUC 2003 | Schools and Society | 3 |
| CHEM 1121 | General Chemistry Laboratory II | CHEM 1112 | 1 | | | |
| MATH 2014 | Calculus I | MATH 2413 | 4 | | | |

| | | | | | | | |
|---------------|--|-----------|---|---------------|------------------------------|-------------|-----|
| BIOL 4593 | Science in the Secondary Classroom | | 3 | Spring | | TCCN | |
| | | | | EDUC 4036 | Student Teaching: Chemistry | | 6 |
| CHEM 3633 | Biochemistry I | | 3 | <hr/> | | | |
| CHEM 3632 | Biochemistry I Laboratory | | 2 | | Semester Credit Hours | | 6 |
| SCI 2103 (GP) | Introduction to Environmental Chemistry: Global Perspectives | ENVR 1401 | 3 | <hr/> | | | |
| | | | | | Total Semester Credit Hours: | | 124 |

(GP) Satisfies global perspectives graduation requirement.

Semester Credit Hours 14

| | | | |
|---------------|--|-------------|---|
| Spring | | TCCN | |
| 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 |

Semester Credit Hours 19

| | | | |
|--------------------|---|-------------|---|
| Senior Fall | | TCCN | |
| 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 |

Semester Credit Hours 18