

Degree Type – Bachelor of Science (BS)
Degree Title – Physical Science with UTeach Certification (6-12)

A BS in Physical Science with teaching certification will enable future educators to gain solid training and education in the areas of chemistry and physics. Future graduates will have a leadership role in improving science education and in enabling the youth to become more interested in STEM careers.

STUDENT LEARNING OUTCOMES:

- 1. Demonstrate solid understanding of physics and chemistry by successfully passing the content exam in 6-12 physical science.**
- 2. Apply knowledge of physics and chemistry principles through a successful student teaching internship.**
- 3. Demonstrate strong pedagogical content knowledge by passing the state teaching certification requirements.**

A – GENERAL EDUCATION – 42 hours

Students must fulfill the General Education Core requirements. The courses listed below satisfy both degree requirements and General Education Core requirements.

Required**Mathematics – 3 hours**

MATH 2413 Calculus I (or MATH 2487 Honors) three-hour lecture

Life and Physical Sciences – 6 hours

CHEM 1311 General Chemistry I

CHEM 1312 General Chemistry II

Integrative and Experiential Learning – 3 hours

CHEM 1111 General Chemistry I Lab

CHEM 1112 General Chemistry II Lab

B – MAJOR REQUIREMENTS – 60 hours (32 advanced)**1 – Physics Core Courses – 30 hours (22 advanced)**

PHYS 2411 Physics for Teachers I

PHYS 2412 Physics for Teachers II

PHYS 3301 Electromagnetic Theory

PHYS 3402 Modern Physics

PHYS 3404 Optics

PHYS 4401 Physics Education

PHYS 3101 Junior Laboratory Research I

PHYS 3330 Functions and Modeling

PHYS 4392 Research Methods

2 – Chemistry – 18 hours (7 advanced)

CHEM 2323 Organic Chemistry I

CHEM 2123 Organic Chemistry I Lab

CHEM 2325 Organic Chemistry II

CHEM 2125 Organic Chemistry II Lab

CHEM 2301 Analytical Chemistry

CHEM 3303 Biochemistry

CHEM 4401 Chemistry Education

3 – Mathematics – 12 hours (3 advanced)

MATH 2413 Calculus I (or MATH 2487 Honors) one-hour lecture

MATH 2414 Calculus II (or MATH 2488 Honors)

MATH 2415 Calculus III

MATE 3317 Perspective in Mathematics and Science (or PHIL 3317)

C – UTEACH CERTIFICATION – 21 hours (19 advanced)

Area of Certification: Physical Science (6-12)

UTCH 1101 Inquiry Approaches to Teaching

UTCH 1102 Inquiry-Based Lesson Design

UTCH 3301 Knowing and Learning in Mathematics and Science

UTCH 3302 Classroom Interactions

UTCH 3303 Project-Based Instruction

UTCH 4601 Apprentice Teaching

UTCH 4101 Apprentice Teaching Seminar

READ 4305 Content Area Literacy

TOTAL CREDIT HOURS FOR GRADUATION – 123 HOURS

TOTAL ADVANCED HOURS – 51 HOURS

ADMISSION, PROGRESSION, AND GRADUATION REQUIREMENTS, if applicable:

Progression requirements

Admission to the College of Education and P-16 Integration is required for participation in Apprentice Teaching and Seminar (UTCH 4101, 4601). Students unable to be admitted to UTCH 4601 and UTCH 4101 will be required to substitute 4 advanced hours, as recommended by advisor.

Graduation requirements

In addition to the graduation requirements listed in the UTRGV 2015-2017 Undergraduate Catalog, demonstration of proficiency in a language other than English is required at the undergraduate level equivalent to a minimum of six credit hours. Proficiency can be demonstrated by a college credit exam, a placement test approved through the UTRGV Department of Writing and Language Studies, and/or up to six credit hours of college-level language coursework.