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.