A Physicist has a solid understanding of fundamental laws, which in turn can be applied to a wide area of scientific and engineering fields. It is an exciting career that requires discipline and significant amount of work. It also requires development of mathematical, experimental, theoretical, and computational skills. As a result of the Physicist's solid and broad background, Physicists can apply to a wide range of job opportunities, including National Laboratories and Research Centers, Industry, and Academia.

A – GENERAL EDUCATION CORE – 42 HOURS

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

Required

020 - Mathematics – 3 hours

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

030 - Life and Physical Sciences – 6 hours

PHYS 2425 Physics for Scientists and Engineers I three-hour lecture
PHYS 2426 Physics for Scientists and Engineers II three-hour lecture

090 - Integrative and Experiential Learning – 6 hours

CSCI 1380 Computer Science I
PHYS 2425 Physics for Scientists and Engineers I one-hour lab
PHYS 2426 Physics for Scientists and Engineers II one-hour lab
Any additional course of at least 1 hour that satisfies the General Education Core "Integrative/Experiential Learning Option" requirement.

B – MAJOR REQUIREMENTS – 72 HOURS (61 advanced)

1 – Physics Core Courses – 27 hours (27 advanced)

PHYS 3305 Classical Mechanics
PHYS 3303 Thermodynamics
PHYS 3304 Optics
PHYS 3402 Modern Physics
PHYS 3411 Math Methods in Physics I
PHYS 4305 Statistical Mechanics
PHYS 3301 Electromagnetic Theory I
PHYS 4303 Quantum Mechanics I
PHYS 4101 Senior Laboratory Research

2 – Capstone Course – 3 hours (3 advanced)

PHYS 4300 Undergraduate Research Project

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
MATH 3341 Differential Equations

4 – Educational Physics – 30 hours (28 advanced)

i – Educational Physics – 6 hours (6 advanced)

PHYS 4392 Research Methods
PHYS 3330 Functions and Modeling

ii – UTeach Certification – 24 hours (22 advanced)

Area of Certification: Physics/Mathematics (7-12)

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

C – LANGUAGE COURSES** – 6 HOURS

Choose six hours of the same language other than English listed under the Second Language Proficiency Requirement policy.

**Note: should the student fulfil the Second Language Proficiency requirements without credit-hours, then the 6 hours of Language Courses can be substituted by 6 hours of Free Electives.

TOTAL CREDIT HOURS FOR GRADUATION – 120 HOURS
TOTAL ADVANCED HOURS – 61 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 7 advanced hours, as recommended by advisor.

Graduation requirements

In addition to the graduation requirements listed in the UTRGV 2017-2019 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.