

# Physics B.A./B.S. with Teaching Emphasis

## Physics B.A./B.S. with Teaching Emphasis

The Physics B.A./B.S. with Teaching Emphasis is designed for students who wish to teach physics at the middle or high school level. It provides a broad but rigorous background in the physics and chemistry needed by successful teachers, and includes an advanced physics education course designed specifically for majors in this program.

### Core Curriculum Courses

See the Core Curriculum Requirements (<http://coursecatalog.tamuc.edu/undergrad/core-curriculum-requirements/>) 42

### Teacher Certification, 6-12 Physical Science

#### Required courses in the major

PHYS 101	Physics and Astronomy Seminar	1
PHYS 2425	University Physics I *	
PHYS 2426	University Physics II *	
PHYS 317	Mathematical Methods for Physics and Engineering	3
PHYS 321	Modern Physics	3
PHYS 333	Wave Motion, Acoustics, and Optics	4
PHYS 345	Teaching and Learning Physics	3
PHYS 371	Science and Math Education Theory and Practice (Total of 2 hours)	2
or PHYS 401	Current Topics in Physics and Astronomy	
PHYS 411	Classical Mechanics	3
PHYS 412	Electricity and Magnetism	3
PHYS 420	Quantum Mechanics	3
PHYS 335	Advanced Physics Laboratory	3
or PHYS 319	Computational Physics with Python	
PHYS Elective (ADV)		4
CHEM 1111	General and Quantitative Chemistry Laboratory I	1
CHEM 1311	General and Quantitative Chemistry I *	3
CHEM 1112	General and Quantitative Chemistry Laboratory II	1
CHEM 1312	General and Quantitative Chemistry II *	3
CHEM 351	Physical Chemistry	4

#### Teacher Education courses (LeoTeach Sequence)

PSY 300	Learning Processes and Development	3
SED 330	Roles and Responsibilities of Professional STEM Educators	3
SED 331	Instructional Design for Student Engagement in STEM	3
SED 332	Project Based Learning in STEM	3
RDG 380	Comprehension and Vocabulary in Middle and High Schools	3
SED 400	Pedagogy and Classroom Management in Field-based Environments	3
SED 401	Technology Infused Curriculum and Assessment in Field-based Environments	3
SED 404	Secondary Teaching Practicum	3
SED 405	Secondary Residency in Teaching	6

#### Support courses

MATH 2413	Calculus I *	
MATH 2414	Calculus II *	
MATH 2415	Calculus III	4

#### Total Hours

120

\* This course should be used to satisfy the core curriculum requirements.  
A grade of "C" or higher must be earned in all courses in this Major.