

Broadfield Science with a Major in Physics B.A./ B.S.

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.