

PHYSICS - BS, PHYSICAL SCIENCE TEACHING TRACK

The Bachelor of Science in Physics, Physical Science Teaching track, will provide you with a solid foundation in Physics and the courses required for the aggieTEACH – Math & Science Program (<https://aggieteachscience.tamu.edu/>) (must apply). Upon completion of this degree and one semester of clinical teaching, you will hold a Texas Physical Science (grades 6-12) certification. Although this degree is designed for students who want to teach, the Physics courses also build a strong foundation in critical thinking and quantitative problem-solving skills that are attractive to many areas of industry.

Program Requirements

First Year

Fall		Semester Credit Hours
ARSC 201	Experiences In Secondary Math and Science Classrooms	1
ENGL 103 or ENGL 104	Introduction to Rhetoric and Composition or Composition and Rhetoric	3
MATH 171	Calculus I ¹	4
PHYS 101	Freshman Physics Orientation ¹	1
PHYS 150	Introduction for Programming for Physics ¹	3
American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) ²		3
Semester Credit Hours		15

Spring		
ASTR 102	Observational Astronomy ¹	1
MATH 172	Calculus II ¹	4
PHYS 206 & PHYS 226	Newtonian Mechanics for Engineering and Science and Physics of Motion Laboratory for the Sciences ¹	4
American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) ²		3
Language, philosophy and culture (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture) ²		3
Semester Credit Hours		15

Second Year

Fall		
MATH 221	Several Variable Calculus ¹	4
MATH 308	Differential Equations ¹	3
PHYS 207 & PHYS 227	Electricity and Magnetism for Engineering and Science and Electricity and Magnetism Laboratory for the Sciences ¹	4
PHYS 221	Optics and Thermal Physics ¹	3
Semester Credit Hours		14

Spring

PHYS 225	Electronic Circuits and Applications	3
PHYS 309	Modern Physics ¹	3
PHYS 331	Theoretical Methods for Physicists I ¹	3
Select one of the following:		3
INST 222	Foundations of Education in a Multicultural Society ³	
SOCI 317/AFST 317	Racial and Ethnic Relations	
TEFB 273	Introduction to Culture, Community, Society and Schools	
Communication (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication) ⁴		3
Semester Credit Hours		15

Third Year

Fall		
INST 210	Understanding Special Populations ⁵	3
PHYS 302	Advanced Mechanics I	3
PHYS 304	Advanced Electricity and Magnetism I	3
PHYS 332	Theoretical Methods for Physicists II	3
POLS 206	American National Government	3
Semester Credit Hours		15

Spring

PHYS 303 or PHYS 305	Advanced Mechanics II or Advanced Electricity and Magnetism II	3
PHYS 327	Experimental Physics I ⁶	2
PHYS 328	Experimental Physics II ⁶	1
PHYS 412	Quantum Mechanics I	3
TEFB 322	Teaching and Schooling in Modern Society	3
RDNG 465 or RDNG 372	Reading in the Middle and Secondary Grades or Reading and Writing across the Middle Grades Curriculum	3
Semester Credit Hours		15

Fourth Year

Fall		
PHYS 408	Thermodynamics and Statistical Mechanics	4
POLS 207	State and Local Government	3
TEFB 324	Teaching Skills II ⁷	3
Select one of the following:		4
CHEM 119	Fundamentals of Chemistry I	
CHEM 107 & CHEM 117	General Chemistry for Engineering Students and General Chemistry for Engineering Students Laboratory	
General elective ⁸		2
Semester Credit Hours		16

Spring

CHEM 120	Fundamentals of Chemistry II	4
TEFB 406	Science in the Middle and Secondary School	3

Creative arts (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts) ²	3
Science or technical elective ⁹	3
General Elective ⁸	2
Semester Credit Hours	15
Total Semester Credit Hours	120

¹ A Physics major must complete the foundation courses (ASTR 102, PHYS 101, PHYS 150, PHYS 206/PHYS 226, PHYS 207/PHYS 227, PHYS 221, PHYS 309 PHYS 331, MATH 171, MATH 172, MATH 221, MATH 308) with a grade of C or better and have a 2.0 cumulative GPA before taking non-foundation upper-level physics courses.

² Any course in this category from the approved University Core Curriculum (<https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/>) list of courses.

³ INST 222 is an approved Social and Behavioral Science, International and Cultural Diversity and Cultural Discourse class.

⁴ Any approved Communication (<https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/>) course, except PERF 407.

⁵ INST 210 is an approved Social and Behavioral Science and Cultural Discourse class.

⁶ PHYS 327 is an approved W course. PHYS 328 is an approved C course.

⁷ Students must apply, and be admitted, to aggieTEACH - Science, before beginning this class. Students are required to have 2.75 overall GPA and a 2.5 GPA in content areas.

⁸ Electives should be chosen in consultation with the student's advisor. Electives may be selected from any 100-499 course not used elsewhere, except ENGL 103; MATH 100-148, 165-166, 365-366 (<http://catalog.tamu.edu/undergraduate/course-descriptions/math/>); PHYS 201, PHYS 202.

⁹ Any upper-division course in geo/life/physical sciences, mathematics/statistics, or engineering (except 485/491).