

# PHYSICS - BS, PHYSICS AND MATHEMATICS TEACHING TRACK

## Program Requirements

### First Year

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

### Spring

ASTR 102	Observational Astronomy <sup>1</sup>	1
MATH 172	Calculus II <sup>1</sup>	4
PHYS 206 & PHYS 226	Newtonian Mechanics for Engineering and Science and Physics of Motion Laboratory for the Sciences <sup>1</sup>	4
Select one of the following:		3
INST 222	Foundations of Education in a Multicultural Society <sup>3</sup>	
SOCI 317/ AFST 317	Racial and Ethnic Relations	
TEFB 273	Introduction to Culture, Community, Society and Schools	
American history ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history</a> ) <sup>2</sup>		3
<b>Semester Credit Hours</b>		<b>15</b>

### Second Year

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

### Spring

PHYS 225	Electronic Circuits and Applications	3
PHYS 309	Modern Physics <sup>1</sup>	3
PHYS 331	Theoretical Methods for Physicists I <sup>1</sup>	3

Select one of the following:		3
MATH 304	Linear Algebra	
MATH 311	Topics in Applied Mathematics I	
MATH 323	Linear Algebra	

Communication (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication>) <sup>4</sup>

**Semester Credit Hours** 15

### Third Year

Fall		Semester Credit Hours
INST 210	Understanding Special Populations <sup>5</sup>	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
<b>Semester Credit Hours</b>		<b>15</b>

### Spring

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

### Fourth Year

Fall		Semester Credit Hours
MATH 467 or MATH 367	Modern Geometry or Basic Concepts of Geometry	3
PHYS 408	Thermodynamics and Statistical Mechanics	4
TEFB 324	Teaching Skills II <sup>7</sup>	3
Creative arts ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts</a> ) <sup>2</sup>		3
Language, philosophy and culture ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture</a> ) <sup>2</sup>		3
<b>Semester Credit Hours</b>		<b>16</b>

### Spring

MATH 376 or MATH 415	Intermediate Abstract Algebra or Modern Algebra I	3
POLS 207	State and Local Government	3
STAT 211 or STAT 303	Principles of Statistics I or Statistical Methods	3
TEFB 407 or TEFB 406	Mathematics in the Middle and Senior School or Science in the Middle and Secondary School	3

Science or Technical Elective <sup>8</sup>	3
<b>Semester Credit Hours</b>	<b>15</b>
<b>Total Semester Credit Hours</b>	<b>120</b>

- <sup>1</sup> 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.
- <sup>2</sup> Any course in this category from the approved University Core Curriculum (<https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/>) list of courses.
- <sup>3</sup> INST 222 is an approved Social and Behavioral Science, International and Cultural Diversity and Cultural Discourse class.
- <sup>4</sup> Any approved Communication (<https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/>) course, except PERF 407.
- <sup>5</sup> INST 210 is an approved Social and Behavioral Science and Cultural Discourse class.
- <sup>6</sup> PHYS 327 is an approved W course. PHYS 328 is an approved C course.
- <sup>7</sup> 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.
- <sup>8</sup> Any upper-division course in geo/life/physical sciences, mathematics/statistics, or engineering (except 485/491). Note: students seeking secondary certification through this degree must take MATH 403 for this elective.