

# PHYSICS, BACHELOR OF SCIENCE

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## Curriculum

The matrix below is a sample plan for all coursework required for this program.

Course	Title	Hours	Completed
<b>Freshman</b>			
<b>Fall</b>			
ENGL 1013	Composition I <sup>1</sup>	3	_____
CHEM 2124 & CHEM 2120	General Chemistry I and General Chemistry I Lab	4	_____
COMS 1011 & COMS 1013	Programming Foundations I Lab and Programming Foundations I	4	_____
MATH 2914	Calculus I	4	_____
PHSC 1001	Orientation to Physical Science	1	_____
	<b>Hours</b>	<b>16</b>	
<b>Spring</b>			
CHEM 2134 & CHEM 2130	General Chemistry II and General Chemistry II Lab	4	_____
ENGL 1023	Composition II <sup>1</sup>	3	_____
MATH 2924	Calculus II	4	_____
PHSC 1011	Orientation to Physical Science II	1	_____
PHYS 2114 & PHYS 2000	Calculus-Based Physics I and Physics Laboratory I	4	_____
	<b>Hours</b>	<b>16</b>	
<b>Sophomore</b>			
<b>Fall</b>			
COMS 2203	Programming Foundations II	3	_____
MATH 2934	Calculus III	4	_____
PHYS 2124 & PHYS 2010	Calculus-Based Physics II and Physics Laboratory II	4	_____
SS 1XXX	Social Science Courses <sup>1</sup>	3	_____
	<b>Hours</b>	<b>14</b>	
<b>Spring</b>			
BIOL XXXX	Biological Science with Laboratory <sup>1</sup>	4	_____
ELEG 2103	Electric Circuits I	3	_____
MATH 3243	Differential Equations I	3	_____
PHYS 3213	Modern Physics	3	_____
USHG 1XXX	U.S. History and Government <sup>1</sup>	3	_____
	<b>Hours</b>	<b>16</b>	
<b>Junior</b>			
<b>Fall</b>			
COMS 2323	Programming in Python	3	_____
ELEG 2111	Electric Circuits Laboratory	1	_____
ELEG 2113	Electric Circuits II	3	_____
FAH 1XXX	Fine Arts and Humanities Courses <sup>1</sup>	3	_____
PHYS 3023 or PHYS 4013	Mechanics or Quantum Mechanics	3	_____

PHYS 3133 or PHYS 4023	Theory of Electricity and Magnetism or Computational Physics	3	_____
<b>Hours</b>		<b>16</b>	
<b>Spring</b>			
FAH 1XXX	Fine Arts and Humanities Courses <sup>1</sup>	3	_____
PHYS 3003 or PHYS 4113	Optics or Advanced Physics Laboratory	3	_____
PHYS 4213 or PHYS 4003	Advanced Topics in Physics and Astronomy (or an upper division Mathematics course) or Thermodynamics and Statistical Mechanics	3	_____
STAT 3153	Applied Statistics	3	_____
Electives <sup>2</sup>		2	
<b>Hours</b>		<b>14</b>	
<b>Senior</b>			
<b>Fall</b>			
MATH 4003	Linear Algebra I	3	_____
PHYS 3023 or PHYS 4013	Mechanics or Quantum Mechanics	3	_____
PHYS 3133 or PHYS 4023	Theory of Electricity and Magnetism or Computational Physics	3	_____
SS 1XXX	Social Science Courses <sup>1</sup>	3	_____
Elective (3000-4000 level) <sup>2</sup>		3	
<b>Hours</b>		<b>15</b>	
<b>Spring</b>			
PHYS 3003 or PHYS 4113	Optics or Advanced Physics Laboratory	3	_____
PHYS 4213 or PHYS 4003	Advanced Topics in Physics and Astronomy (or an upper division Mathematics course) or Thermodynamics and Statistical Mechanics	3	_____
PHYS 4951	Physics or Engineering Physics Capstone	1	_____
SFHS 1XXX	Social Sciences/Fine Arts/ Humanities/Communication Courses <sup>1</sup>	3	_____
Electives (3000-4000 level) <sup>2</sup>		3	
<b>Hours</b>		<b>13</b>	
<b>Total Hours</b>		<b>120</b>	

<sup>1</sup> See appropriate alternatives or substitutions in "General Education Requirements (<https://catalog.atu.edu/undergraduate/general-education-requirements/>)". A specific general education core course does not have to be taken in the semester listed, any other part of the general education core at any time is acceptable as well.

<sup>2</sup> Seven hours of electives must be from physical sciences, biology, engineering, computer science.

Excluding MATH 3003 Foundations of Advanced Mathematics, MATH 3033 Methods of Teaching Elementary Mathematics, and MATH 4113 History of Mathematics.

Must complete both the PHYS 4113 Advanced Physics Laboratory and 3 hours PHYS electives (PHYS course offered in alternating years).