

# BACHELOR OF SCIENCE IN ASTROPHYSICS

The School of Physics offers three undergraduate degrees, the Bachelor of Science in Physics, the Bachelor of Science in Applied Physics and the Bachelor of Science in Astrophysics. The astrophysics degree provides comprehensive and rigorous training in the fundamental processes and laws that govern planetary systems, stars, galaxies, and the Universe. In addition to these core topics, the degree includes training in computational techniques and data analysis that can be applied to a variety of disciplines.

The skills learned as part of the B.S. in Astrophysics are transferable to a wide range of careers across multiple sectors of the digital economy, such as data scientists, software engineers, and research analysts. Graduates have found jobs in the finance sector, with Fortune 500 companies, and at innovative start-ups. For those who want to deepen their understanding of the universe after graduation, the B.S. in Astrophysics will qualify students for graduate programs in physics and astrophysics at universities around the world.

Undergraduate research is a cornerstone of the Astrophysics experience at Georgia Tech with approximately 80% of majors in the School of Physics completing at least one semester of undergraduate research before graduation. Students are encouraged to get involved in research from their very first year, working alongside leading faculty on cutting-edge projects. These experiences can lead to authorship on published research papers and opportunities to present findings at national and international conferences. Undergraduate research can be taken for academic credit, and paid research positions are also available, providing valuable experience and professional development.

A total of 120 credit hours (exclusive of wellness) and a grade-point average of at least 2.0 in physics courses numbered 3000 and higher are requisites for the bachelor's degree in Astrophysics.

Code	Title	Credit Hours
<b>Wellness Requirement</b>		
APPH 1040	Scientific Foundations of Health	2
	or APPH 10 The Science of Physical Activity and Health	
	or APPH 10 Flourishing: Strategies for Well-being and Resilience	
<b>Core IMPACTS</b>		
<b>Institutional Priority</b>		
CS 1301	Introduction to Computing	3
	or CS 1371 Computing for Engineers	
<b>Mathematics and Quantitative Skills</b>		
MATH 1552	Integral Calculus	4
<b>Political Science and U.S. History</b>		
HIST 2111	The United States to 1877	3
	or HIST 2112 The United States since 1877	
	or INTA 1200 American Government in Comparative Perspective	
	or POL 1101 Government of the United States	
	or PUBP 3000 American Constitutional Issues	
<b>Arts, Humanities, and Ethics</b>		
Any HUM		6
<b>Communicating in Writing</b>		

ENGL 1101	English Composition I	3
ENGL 1102	English Composition II	3
<b>Technology, Mathematics, and Sciences</b>		
PHYS 2211	Principles of Physics I <sup>1</sup>	4
PHYS 2212	Principles of Physics II <sup>2</sup>	4
MATH 1551	Differential Calculus	2
MATH 1553	Introduction to Linear Algebra	2
	or MATH 1554 Linear Algebra	
	or MATH 1555 Linear Algebra with Abstract Vector Spaces	
<b>Social Sciences</b>		
Any SS		9
<b>Field of Study</b>		
MATH 2551	Multivariable Calculus	4
MATH 2552	Differential Equations	4
CHEM 1310	Principles of General Chemistry for Engineers	4
	or CHEM 1210 Chemical Principles I	
PHYS 2213	Introduction to Modern Physics	3
PHYS 2210	Introduction to Astrophysics	3
<b>Upper-Level Physics and Astrophysics</b>		
PHYS 3201	Classical Mechanics I	3
PHYS 3122	Electrostatics and Magnetostatics	3
PHYS 3123	Electrodynamics	3
PHYS 3141	Thermodynamics	3
PHYS 3143	Quantum Mechanics I	3
PHYS 4142	Statistical Mechanics	3
PHYS 4143	Quantum Mechanics II	3
PHYS 3022	Stars and Planets	3
PHYS 3210	Astronomy & Astrophysics Lab	2
PHYS 4147	Relativity	3
PHYS 4247	Cosmology and Galaxies	3
PHYS 4347	Theoretical Astrophysics	3
Physics Electives <sup>3</sup>		9
<b>Free Electives</b>		
Free Electives		15
<b>Total Credit Hours</b>		<b>122</b>

Student must have 2.0 in all PHYS classes 3000-level or higher

Pass-fail only allowed for Free Electives

<sup>1</sup> If PHYS 2231 is taken, extra hour goes toward Physics Electives

<sup>2</sup> If PHYS 2232 is taken, extra hour goes toward Physics Electives

<sup>3</sup> Must choose from: PHYS 3120, PHYS 3151, PHYS 3202, PHYS 3232, PHYS 4261, PHYS 4263, PHYS 4604, PHYS 4605, PHYS 4803 Special Topics: Space Plasma Physics, PHYS 4699 Undergraduate Research (at most 3 hours), other courses if approved by advisor.