

# Bachelor of Science Physics with a Major in Astrophysics (BS)

## Degree Program Guide

The Degree Program Guide is a suggested curriculum to complete this degree program in four years. It is just one of several plans that will work and is presented only as broad guidance to students. Each student is strongly encouraged to develop a customized plan in consultation with their academic advisor. Additional information can also be found in Degree Works.

Course	Title	Credit Hours
<b>Freshman</b>		
<b>Fall</b>		
ENGL 110C	English Composition (Grade of C or better required)	3
MATH 211	Calculus I	4
CHEM 121N and CHEM 122N		4
Elective or Language & Culture I (May be waived; See requirement details)		3
<b>Credit Hours</b>		<b>14</b>
<b>Spring</b>		
MATH 212	Calculus II	4
Select one of the following:		4
PHYS 261N	Advanced University Physics I	
PHYS 231N	University Physics I	
PHYS 226N	Honors: University Physics I	
ASTP 103N or ASTP 104N	Introductory Astronomy of the Solar System or Introductory Astronomy of Galaxies and Cosmology	4
Elective or Language & Culture II (May be waived; See requirement details)		0-3
<b>Credit Hours</b>		<b>12-15</b>
<b>Sophomore</b>		
<b>Fall</b>		
ENGL 211C or ENGL 231C (Grade of C or better required)		3
MATH 312 or MATH 285		4
Select one of the following:		4
PHYS 262N	Advanced University Physics II	
PHYS 232N	University Physics II	
PHYS 227N	Honors: University Physics II	
Select one of the following:		3
CS 120G	Introduction to Information Literacy and Research	
CS 121G	Introduction to Information Literacy and Research for Scientists	
OEAS 130G	Research Skills and Information Literacy for the Natural Sciences	
Oral Communication		3
<b>Credit Hours</b>		<b>17</b>

<b>Spring</b>		
PHYS 319	Analytical Mechanics	3
MATH 307 or MATH 280		3
CS 151 or CS 153	Introduction to Programming with Java or Introduction to Programming with Python	4
PHYS 120 or PHYS 309 *		1
Human Creativity		3
Interpreting the Past		3
<b>Credit Hours</b>		<b>17</b>
<b>Junior</b>		
<b>Fall</b>		
PHYS 355	Mathematical Methods of Physics	3
PHYS 303	Intermediate Experimental Physics	3
PHYS 323	Modern Physics	3
PHYS 425	Electromagnetism I	3
Literature		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
ASTP 313	Elements of Astrophysics *	3
Select one of the following:		3
PHYS 413	Methods of Experimental Physics	
PHYS 453	Electromagnetism II *	
PHYS 456	Intermediate Quantum Mechanics *	
PHYS 499W or PHYS 489W & PHYS 490W (Grade of C or better required)		3
Select one of the following:		3
MATH 316	Introductory Linear Algebra	
MATH 401	Partial Differential Equations	
MATH 421	Applied Mathematics II: Mathematical Modeling	
MATH 422	Applied Complex Variables	
Human Behavior		3
<b>Credit Hours</b>		<b>15</b>
<b>Senior</b>		
<b>Fall</b>		
PHYS 452	Introduction to Quantum Mechanics	3
PHYS 420	Introductory Computational Physics	3
ASTP 414	Relativity and Cosmology	3
Impact of Technology		3
Upper-Division General Education Course (Option D)		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
Select one of the following:		3
PHYS 413	Methods of Experimental Physics	
PHYS 453	Electromagnetism II *	

PHYS 456	Intermediate Quantum Mechanics *	
PHYS 454	Thermal and Statistical Physics	3
Philosophy and Ethics		3
ASTP 495	Special Topics in Astrophysics	3
Upper-Division General Education Course (Option D)		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>120-123</b>

\*PHYS 120 and PHYS 420 are offered fall semester only. ASTP 313, PHYS 309, PHYS 453, and PHYS 456 are offered spring semester only.