

Astronomy

Along with Greek, Latin, and Mathematics, Astronomy counts as one of the oldest continuously taught subjects in the Brown curriculum. It is the study of the properties of stars, galaxies, and the Universe, and as such combines elements from the disciplines of both Physics and Planetary Geology. Students pursuing this concentration complete introductory coursework in classical mechanics, relativity, and astrophysics, along with mathematics and electromagnetism. They go on to complete courses in stellar and extragalactic astrophysics as well as cosmology. Facilities available to concentrators include the historic Ladd Observatory.

Standard concentration for the A.B. degree

Eleven or twelve courses are required (depending on the satisfaction of prerequisites).

Prerequisites

PHYS 0070	Analytical Mechanics	1
PHYS 0160	Introduction to Relativity, Waves and Quantum Physics ¹	1
PHYS 0270	Astronomy and Astrophysics	1
Select one of the following Series:		1-2
MATH 0170 & MATH 0180	Single Variable Calculus, Part II (Accelerated) and Multivariable Calculus	
MATH 0190 & MATH 0200	Single Variable Calculus, Part II (Physics/Engineering) and Multivariable Calculus (Physics/Engineering)	
MATH 0350	Multivariable Calculus With Theory (or equivalent)	
PHYS 0470	Electricity and Magnetism	1

Program

Select one of the following mathematics courses:		1
MATH 0520	Linear Algebra	
MATH 0540	Linear Algebra With Theory	
PHYS 0720	Methods of Mathematical Physics	
APMA 0330	Methods of Applied Mathematics I	
APMA 0340	Methods of Applied Mathematics II	
Select two of the following astrophysics courses:		2
PHYS 1100	General Relativity	
PHYS 1250	Stellar Structure and the Interstellar Medium	
PHYS 1270	Extragalactic Astronomy and High-Energy Astrophysics	
PHYS 1280	Introduction to Cosmology	
Three additional 1000- or 2000-level courses in physics or a related field, suggestions:		3
APMA 1670	Statistical Analysis of Time Series	
EEPS 0810	Planetary Geology	
EEPS 1710	Remote Sensing of Earth and Planetary Surfaces	
EEPS 1810	Physics of Planetary Evolution	
ENGN 1860	Advanced Fluid Mechanics	
MATH 1060	Differential Geometry	
PHYS 0500	Advanced Classical Mechanics	
PHYS 0560	Experiments in Modern Physics	
PHYS 1410	Quantum Mechanics A	
PHYS 1510	Advanced Electromagnetic Theory	
PHYS 1530	Thermodynamics and Statistical Mechanics	

PHYS 1560	Modern Physics Laboratory
Total Credits	11-12

¹ PHYS 0050 and PHYS 0060 can be taken in lieu of PHYS 0160