# 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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PHYS 0070</td>
<td>Analytical Mechanics</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 0160</td>
<td>Introduction to Relativity, Waves and Quantum Physics</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 0270</td>
<td>Introduction to Astronomy</td>
<td>1</td>
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</table>

Select one of the following Series: 1-2

- MATH 0170 & MATH 0180: Advanced Placement Calculus and Intermediate Calculus
- MATH 0190 & MATH 0200: Advanced Placement Calculus (Physics/Engineering) and Intermediate Calculus (Physics/Engineering)
- MATH 0350: Honors Calculus (or equivalent)

### Program

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PHYS 0470</td>
<td>Electricity and Magnetism</td>
<td>1</td>
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</table>

Select one of the following mathematics courses: 1

- MATH 0520: Linear Algebra
- MATH 0540: Honors Linear Algebra
- PHYS 0720: Methods of Mathematical Physics
- APMA 0330: Methods of Applied Mathematics I, II
- APMA 0340: Methods of Applied Mathematics I, II

Select two of the following astrophysics courses: 2

- PHYS 1100: Introduction to 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
- ENGN 1860: Advanced Fluid Mechanics
- GEOL 0810: Planetary Geology
- GEOL 1810: Physics of Planetary Evolution
- 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
Font Notice

This document should contain certain fonts with restrictive licenses. For this draft, substitutions were made using less legally restrictive fonts. Specifically:
Helvética was used instead of Arial.
The editor may contact Leepfrog for a draft with the correct fonts in place.