Astronomy, BA

Requirements

The Bachelor of Arts with a major in astronomy requires a minimum of 120 s.h., including at least 49 s.h. of work for the major. The BA program requires fewer physics and mathematics courses than the BS program does, giving students a wider choice of electives. Students take calculus in addition to physics and astronomy courses, which include laboratories. They also must complete the College of Liberal Arts and Sciences GE CLAS Core.

The program is designed for students who wish to build considerable knowledge in astronomy but do not plan a research-oriented career in the field. It is appropriate for students planning careers in secondary school science teaching or science-related administration.

The BA with a major in astronomy requires the following courses or their equivalents. Substitutions may be allowed by exception through the department.

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<th>Requirements</th>
<th>Hours</th>
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<tr>
<td>Mathematics Courses</td>
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<td>Physics Courses</td>
<td>24-29</td>
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<td>Astronomy Courses</td>
<td>17</td>
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</table>

Mathematics Courses

Course # | Title                                | Hours |
---------|--------------------------------------|-------|
Both of these:  
MATH:1850 | Calculus I                           | 4     |
MATH:1860 | Calculus II                          | 4     |
Or both of these:  
MATH:1550 | Engineering Mathematics I: Single Variable Calculus | 4     |
MATH:1560 | Engineering Mathematics II: Multivariable Calculus | 4     |

Physics Courses

If students select PHYS:3811 Electricity and Magnetism I, they must complete the prerequisite before they register for that course.

Course # | Title                          | Hours |
---------|--------------------------------|-------|
These three courses:  
PHYS:1701 | Physics I                      | 4     |
PHYS:1702 | Physics II                     | 4     |
PHYS:2703 | Physics III                    | 4     |
Or these two courses:  
PHYS:1611 | Introductory Physics I         | 4     |
PHYS:1612 | Introductory Physics II        | 4     |
All of these:  
PHYS:2704 | Physics IV                     | 4     |
PHYS:3710 | Intermediate Mechanics         | 3     |
PHYS:3756 | Intermediate Laboratory        | 3     |
One of these:  
PHYS:3730 | Statistical Physics            | 3     |
PHYS:4720 | Introductory Optics            | 3     |

Astronomy Courses

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>Hours</th>
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</table>
| All of these:  
ASTR:1771 | Fundamental Astronomy I: The Solar System and Exoplanets | 4     |
ASTR:1772 | Fundamental Astronomy II: Evolution of Stars, Galaxies, and the Universe | 4     |
ASTR:3771 | Introduction to Astrophysics I                 | 3     |
ASTR:3772 | Introduction to Astrophysics II                | 3     |
ASTR:4850 | Observational Techniques in Astronomy         | 3     |

Undergraduate majors who plan to pursue graduate study are advised to go as far as they can beyond the minimum requirements listed above, including further work in mathematics. In planning this work, they should be guided by the College of Liberal Arts and Sciences maximum hours rule: students earning a BA may apply a maximum of 56 s.h. earned in one department to the minimum 120 s.h. required for graduation, whether or not the coursework is accepted toward the requirements for the major. Students who earn more than 56 s.h. from one department may use the additional semester hours to satisfy requirements for the major (if the department accepts them), and the grades they earn become part of their grade-point average, but they cannot apply the additional semester hours to the minimum 120 s.h. required for graduation.

Double Major in Physics and Astronomy

Students working toward a Bachelor of Arts with a double major in physics and in astronomy must complete all requirements for both majors and must earn a minimum of 56 s.h. outside the Department of Physics and Astronomy in order to graduate. Students interested in earning a double major should consult with their advisors. See Requirements for a Bachelor's Degree on the College of Liberal Arts and Sciences website.