ASTRONOMY–PHYSICS, B.A.

REQUIREMENTS

UNIVERSITY GENERAL EDUCATION REQUIREMENTS

All undergraduate students at the University of Wisconsin–Madison are required to fulfill a minimum set of common university general education requirements to ensure that every graduate acquires the essential core of an undergraduate education. This core establishes a foundation for living a productive life, being a citizen of the world, appreciating aesthetic values, and engaging in lifelong learning in a continually changing world. Various schools and colleges will have requirements in addition to the requirements listed below. Consult your advisor for assistance, as needed. For additional information, see the university Undergraduate General Education Requirements (http://guide.wisc.edu/undergraduate/#requirementsforundergraduatestudytext) section of the *Guide*.

General Education	• Breadth—Humanities/Literature/Arts: 6 credits • Breadth—Natural Science: 4 to 6 credits, consisting of one 4- or 5-credit course with a laboratory component; or two courses providing a total of 6 credits • Breadth—Social Studies: 3 credits • Communication Part A & Part B * • Ethnic Studies * • Quantitative Reasoning Part A & Part B *

* The mortarboard symbol appears before the title of any course that fulfills one of the Communication Part A or Part B, Ethnic Studies, or Quantitative Reasoning Part A or Part B requirements.

COLLEGE OF LETTERS & SCIENCE DEGREE REQUIREMENTS: BACHELOR OF ARTS (B.A.)

Students pursuing a bachelor of arts degree in the College of Letters & Science must complete all of the requirements below. The College of Letters & Science allows this major to be paired with either a bachelor of arts or a bachelor of science curriculum.

BACHELOR OF ARTS DEGREE REQUIREMENTS

Mathematics	Complete the University General Education Requirements for Quantitative Reasoning A (QR-A) and Quantitative Reasoning B (QR-B) coursework.
Foreign Language	• Complete the fourth unit of a foreign language; OR • Complete the third unit of a foreign language and the second unit of an additional foreign language.
L&S Breadth	• 12 credits of Humanities, which must include 6 credits of literature; and • 12 credits of Social Science; and • 12 credits of Natural Science, which must include one 3+ credit Biological Science course and one 3+ credit Physical Science course.
Liberal Arts and Science Coursework	Complete at least 108 credits.
Depth of Intermediate/Advanced work	Complete at least 60 credits at the intermediate or advanced level.
Major	Declare and complete at least one major.
Total Credits	Complete at least 120 credits.
UW-Madison Experience	• 30 credits in residence, overall; and • 30 credits in residence after the 86th credit.
Quality of Work	• 2.000 in all coursework at UW–Madison • 2.000 in Intermediate/Advanced level coursework at UW–Madison

NON–L&S STUDENTS PURSUING AN L&S MAJOR

Non–L&S students who have permission from their school/college to pursue an additional major within L&S only need to fulfill the major requirements. They do not need to complete the L&S Degree Requirements above.

REQUIREMENTS FOR THE MAJOR

The major requires a minimum of 34 credits in the field of specialization, with at least 6 of these credits in ASTRON and at least 28 credits in PHYSICS.

COURSE REQUIREMENTS FOR THE MAJOR ARE:

Code	Title	Credits
Astronomy [1]		
Complete at least two of the following:		*6*
ASTRON 310	Stellar Astrophysics [2]	
ASTRON 320	The Interstellar Medium	
ASTRON 330	Galaxies [2]	
ASTRON 335	Cosmology [2]	
ASTRON 340	Solar System Astrophysics	
ASTRON 500	Techniques of Modern Observational Astrophysics [2]	
Physics		
Complete one of the following sequences for Introductory Physics: [3]		*28*
Sequence 1:		
PHYSICS 247 & PHYSICS 248 & PHYSICS 249	A Modern Introduction to Physics and A Modern Introduction to Physics and A Modern Introduction to Physics	
Sequence 2:		
PHYSICS 201 & PHYSICS 202 & PHYSICS 205	General Physics and General Physics and Modern Physics for Engineers	
Sequence 3:		
PHYSICS 207 & PHYSICS 208 & PHYSICS 241	General Physics and General Physics and Introduction to Modern Physics	

Mechanics, Electromagnetic Fields, & Thermal Physics (complete all):	
PHYSICS 311	Mechanics
PHYSICS 322	Electromagnetic Fields
PHYSICS 415	Thermal Physics
Atomic & Quantum Physics (complete either):	
PHYSICS 448 & PHYSICS 449	Atomic and Quantum Physics and Atomic and Quantum Physics
or	
PHYSICS 531	Introduction to Quantum Mechanics
Complete one 300-level or higher laboratory course:	
PHYSICS 307	Intermediate Laboratory-Mechanics and Modern Physics
PHYSICS 321	Electric Circuits and Electronics
PHYSICS 407	Advanced Laboratory
Additional PHYSICS to reach minimum of 28 credits	
Total Credits	**34**

RESIDENCE AND QUALITY OF WORK

- 2.000 GPA in all ASTRON, all PHYSICS, and all major courses
- 2.000 GPA on 15 upper-level major credits in residence[4]
- 15 credits in ASTRON and PHYSICS, taken on campus

HONORS IN THE MAJOR

Students may declare Honors in the Major in consultation with the Astronomy–Physics undergraduate advisor(s).

HONORS IN THE MAJOR REQUIREMENTS

To earn Honors in the Major, students must satisfy both the requirements for the major (above) and the following additional requirements:

- Earn a 3.300 University GPA
- Earn a 3.500 GPA for all ASTRON and PHYSICS courses, and all courses accepted in the major, at the 300 level or higher
- Complete the following coursework:
  - Four 300-level or higher ASTRON courses, with a 3.500 GPA
  - A two-semester Senior Honors Thesis in ASTRON 681 and ASTRON 682, with a grade of AB or better (for a total of 6 credits).

DISTINCTION IN THE MAJOR

Distinction in the Major requires no declaration,and is awarded at the time of graduation. Students may *not* receive Distinction and Honors in the same major. To receive Distinction in the Major, students must have met the following requirements:

- Earn a 3.300 University GPA
- Earn a 3.300 GPA in all major and major subject courses
- Complete 6 additional credits in advanced-level Astronomy beyond the minimum required for the major.

FOOTNOTES

1 ASTRON 103 and ASTRON 104 are not required for majors.

2 ASTRON 310 is a prerequisite for ASTRON 330, ASTRON 335, and ASTRON 500.

3 E M A 201, E M A 202, and M E 240 count toward the 28 credits of PHYSICS requirement. E M A 201 & E M A 202, or E M A 201 & M E 240 count as a first semester, introductory course (e.g., PHYSICS 247, PHYSICS 201, PHYSICS 207).

4 ASTRON 300-699 and PHYSICS 300-699 are upper-level in the major.

UNIVERSITY DEGREE REQUIREMENTS

Total Degree	To receive a bachelor's degree from UW–Madison, students must earn a minimum of 120 degree credits. The requirements for some programs may exceed 120 degree credits. Students should consult with their college or department advisor for information on specific credit requirements.
Residency	Degree candidates are required to earn a minimum of 30 credits in residence at UW–Madison. "In residence" means on the UW–Madison campus with an undergraduate degree classification. “In residence” credit also includes UW–Madison courses offered in distance or online formats and credits earned in UW–Madison Study Abroad/Study Away programs.
Quality of Work	Undergraduate students must maintain the minimum grade point average specified by the school, college, or academic program to remain in good academic standing. Students whose academic performance drops below these minimum thresholds will be placed on academic probation.