ASTRONOMY AND ASTROPHYSICS

Curious about what's out there? Students who are comfortable with mathematics and physics and who want to understand the nature of the Solar System and other planetary systems, stars, galaxies and the universe are encouraged to pursue a BA in Astronomy or a BS in Astrophysics.

About this Program

- **College:** Liberal Arts and Sciences (https://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/)
- **Degrees:** Bachelor of Arts in Astronomy (https://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/ATY_BA_ASP_BS/ATY_BA/) | Bachelor of Science in Astrophysics (https://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/ATY_BA_ASP_BS/ASP_BS/)
- **Credits for Degree:** 120
- **More Info**

To graduate with this major, students must complete all university, college, and major requirements.

Department Information

The Department of Astronomy is home to a vibrant community actively engaged in research, education, and outreach. The department's faculty are involved in a wide range of research programs (https://www.astro.ufl.edu/research/) using world-class resources including an in-house design-through-fabrication instrumentation program (https://www.astro.ufl.edu/instrumentation/past-current-projects/), partner level access to the Gran Telescope Canarias (https://www.astro.ufl.edu/research/telescopes/), the HiPerGator-2 (https://www.astro.ufl.edu/research/computing/) supercomputer, and more.
More Info (https://www.astro.ufl.edu/)

CONTACT

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Map (http://campusmap.ufl.edu/#/index/0038)

Curriculum

- Astrobiology and Planetary Science Minor
- Astronomy Minor

Major Overview

The knowledge acquired and the analytical skills developed provide excellent broad-based training for careers in industry, education and government as well as preparation for graduate study in astronomy and astrophysics, science education, engineering, law, and medicine.

Degree Options

Bachelor of Arts in Astronomy

Broader and less specialized than the BS, with the aim of developing and sharpening analytical and quantitative reasoning while at the same time cultivating broader knowledge that can be applied to a variety of careers, including business, law, the health professions, science writing, and teaching.

Bachelor of Science in Astrophysics

Designed for students who intend to pursue careers in a scientific or technical field by continuing to study astronomy, astrophysics, or physics at the graduate level or to commence study in some related field such as planetary science.

Recommended Coursework for Graduate Study

Students should talk with the undergraduate coordinator and plan to take:

Code	Title	Credits
Select additional courses:		
COP 2271	Computer Programming for Engineers	
or AST 2730	Introduction to Python for Physical Sciences	
MAA 4402	Functions of a Complex Variable	
MAS 3114	Computational Linear Algebra	
PHY 3513	Thermal Physics 1	
PHY 4424	Optics 1	

PHY 4523	Statistical Physics
STA 3032	Engineering Statistics

Students of exceptional ability who have some background in physics are encouraged to take the enriched physics with calculus sequence PHY 2060/PHY 2061 instead of PHY 2048/PHY 2049; PHY 3063 may then be taken in place of PHY 3101; and PHZ 3113 may be substituted for PHY 3221.

Academic Learning Compact

Astronomy and Astrophysics provide knowledge of basic concepts, theories and observational findings concerning the structure and evolution of planetary systems, stars, stellar systems such as galaxies, and cosmology. Students will learn scientific methodology and its application in specific contexts, the use of observations in testing hypotheses and the limitations of astronomical observations as well as how to critically evaluate them.

The Bachelor of Arts in Astronomy enables students to become familiar with modern physics and to understand mathematics, including calculus. The Bachelor of Science in Astrophysics enables students to understand the basic concepts, theories and experimental findings in modern physics, electricity and magnetism, and mechanics as they apply to astronomy and astrophysics.

Before Graduating Students Must

- Demonstrate satisfactory (minimum grades of C) performance on a selection of coursework from each of the 4000-level astronomy courses as graded by a faculty committee independent of the instructor and not as part of the course grade.
- Complete requirements for the baccalaureate degree, as determined by faculty.

Students in the Major Will Learn to

Student Learning Outcomes | SLOs

Content

1. **Bachelor of Arts in Astronomy**
   Identify, describe and define the fundamentals of astronomy, including the basic concepts, theories and observational results for planetary systems, stars, stellar systems and cosmology.
   Bachelor of Science in Astrophysics
   Identify, describe and define the fundamentals of astrophysics, including mechanics, electromagnetism, modern physics and the basic concepts, theories and observational results for planetary systems, stars, stellar systems and cosmology.
2. Define and use the techniques of astronomical observation.

Critical Thinking

3. Critically evaluate results of astronomical research.

Communication

4. Effectively and clearly communicate ideas and results in speech and in writing in an accepted style of presentation.

Curriculum Map | BA and BS

I = Introduced; R = Reinforced; A = Assessed

Courses	SLO 1	SLO 2	SLO 3	SLO 4
AST 3018	I		I	I
AST 3019	I		I	I
AST 3722C	I, R	I, A	R	R
AST 4211	R, A		R	R
AST 4402	R, A		R	R
AST 4723C	R, A	R, A	R	R
AST 4930 (Planetary System Astrophysics)	R, A		R	R
AST 4930 (Senior Seminar)			A	A

Assessment Types for Both Degrees

- Exams
- Portfolios
- Papers
- Oral presentations