ASTRONOMY, BS

Banner Code: SC-BS-ASTR

Undergraduate Astronomy Advisor

Planetary Hall, Room 203
Fairfax Campus

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The program prepares students for graduate school, a career in research or teaching, or employment in industry, business, or education fields where analytical skills and a scientific background are advantageous. Students who are considering a double major should talk to the undergraduate coordinator.

Admissions & Policies

Admissions

University-wide admissions policies can be found in Undergraduate Admissions Policies.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Policies

Students must fulfill all Requirements for Bachelor's Degrees including the Mason Core.

At least 18 credits used to fulfill an Astronomy, BS cannot be used to fulfill another major or minor. Some course substitutions are allowed for double majors, subject to approval from the Department of Physics and Astronomy.

By taking ASTR 402 RS: Methods of Observational Astronomy (Mason Core), astronomy majors satisfy the university's writing-intensive requirement.

For policies governing all undergraduate programs, see AP.5 Undergraduate Policies.

Requirements

Degree Requirements

Total credits: minimum 120

Students should refer to the Admissions & Policies tab for specific policies related to this program.

Students must complete a total of 52 credits in physics and astronomy and 14 credits in mathematics with a minimum GPA of 2.00.

Required Astronomy Courses

Code	Title	Credits
ASTR 210	Introduction to Astrophysics	3
ASTR 328	Stars	3
ASTR 402	RS: Methods of Observational Astronomy (Mason Core) [1]	4
Total Credits		10

[1] Fulfills the writing intensive requirement.

Additional Astronomy Courses

Code	Title	Credits
Select two courses from the following:		6
ASTR 403	Planetary Science	
ASTR 404	Galaxies and Cosmology	
ASTR 480	The Interstellar Medium	
Total Credits		6

Required Physics Courses

Code	Title	Credits
PHYS 160	University Physics I (Mason Core)	3
PHYS 161	University Physics I Laboratory (Mason Core)	1
PHYS 260	University Physics II (Mason Core)	3
PHYS 261	University Physics II Laboratory (Mason Core)	1
PHYS 251	Introduction to Computer Techniques in Physics (Mason Core)	3
PHYS 301	Analytical Methods of Physics	3
PHYS 303	Classical Mechanics	3
PHYS 305	Electromagnetic Theory	3
PHYS 308	Modern Physics with Applications	3
PHYS 416	Special Topics in Undergraduate Physics	1
Total Credits		24

Required Math Courses

Code	Title	Credits
MATH 113	Analytic Geometry and Calculus I (Mason Core)	4
MATH 114	Analytic Geometry and Calculus II	4
MATH 213	Analytic Geometry and Calculus III	3
MATH 214	Elementary Differential Equations	3
Total Credits		14

Astronomy and Physics Courses

Code	Title	Credits
Select 15 credits from the following (at least 12 credits must be from upper-level courses):		15
ASTR 301	Astrobiology	
ASTR 408	Senior Research	

PHYS 306	Wave Motion and Electromagnetic Radiation
PHYS 307	Thermal Physics
PHYS 402	Introduction to Quantum Mechanics and Atomic Physics
ASTR 403	Planetary Science [1]
or ASTR 404	Galaxies and Cosmology
or PHYS 428	Relativity
or ASTR 480	The Interstellar Medium
Other ASTR course with the permission of the department	
Other PHYS course with the permission of the department	
Total Credits	15

[1] ASTR 480 The Interstellar Medium, if not taken as part of additional astronomy course requirement above, may be used here.

Mason Core and Elective Credits

In order to meet a minimum of 120 credits, this degree requires an additional 54 credits, which may be applied toward any remaining Mason Core requirements (outlined below), Requirements for Bachelor's Degrees, and electives. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

Mason Core

Note: Some Mason Core requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core requirements.

Code	Title	Credits
Foundation Requirements		
Written Communication (ENGH 101)		3
Oral Communication		3
Quantitative Reasoning		3
Information Technology and Computing		3
Exploration Requirements		
Arts		3
Global Understanding		3
Literature		3
Natural Science		7
Social and Behavioral Sciences		3
Western Civilization/World History		3
Integration Requirements		
Written Communications (ENGH 302)		3
Writing-Intensive [1]		3
Synthesis/Capstone [2]		3
Total Credits		40

[1] Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

[2] Minimum 3 credits required.

Honors

Honors in the Major

Eligibility

Astronomy majors who have completed the prerequisites for ASTR 405 Honors Thesis in Astronomy I, have a GPA of at least 3.50 in ASTR and PHYS courses taken at Mason, and have a GPA of at least 3.50 in all courses taken at Mason may apply for admission to the astronomy honors program. Please visit the department for details.

Honors Requirements

To graduate with honors in astronomy, a student must maintain a GPA of at least 3.50 in their ASTR/PHYS courses. Students accepted into the honors program must complete ASTR 405 Honors Thesis in Astronomy I and ASTR 406 Honors Thesis in Astronomy II with a GPA of at least 3.50 and a grade of 'A-' or better in ASTR 406 Honors Thesis in Astronomy II. Students in ASTR 405 Honors Thesis in Astronomy I/ASTR 406 Honors Thesis in Astronomy II will complete a research project and write a thesis working under the supervision of a faculty member. At the end of ASTR 406 Honors Thesis in Astronomy II, the student will write a substantial thesis paper and make a presentation of results to their honors committee.