

Astrophysics and Astronomy, MS

LAASTPHMS

Prepare yourself to discover new planets, explore cosmology, and build space-flight hardware and instruments for telescopes and satellites. You can work with world-class faculty on NASA- and NSF-funded space missions, and seek answers to questions about how our universe began and how it continues to evolve.

Program description

Degree awarded: MS Astrophysics and Astronomy

The MS program in astrophysics and astronomy provides fundamental graduate training in both astrophysics and astronomy.

Students take graduate-level courses in stars and interstellar media, galaxies and cosmology; obtain quantitative skills through analysis and modelling; and they may have observation opportunities through regional and international telescope observatories.

At a glance

- **College/School:** [The College of Liberal Arts and Sciences](#)
- **Location:** [Tempe](#)

Accelerated program options

This program allows students to obtain both a bachelor's and master's degree in as little as five years. It is offered as an [accelerated bachelor's plus master's degree](#) with:

[Aerospace Engineering \(Aeronautics\), BSE](#)

[Aerospace Engineering \(Astronautics\), BSE](#)

[Aerospace Engineering \(Autonomous Vehicle Systems\), BSE](#)

[Earth and Space Exploration, BS](#)

[Earth and Space Exploration \(Astrobiology and Biogeosciences\), BS](#)

[Earth and Space Exploration \(Astrophysics\), BS](#)

[Earth and Space Exploration \(Exploration Systems Design\), BS](#)

[Earth and Space Exploration \(Geological and Planetary Sciences\), BS](#)

[Electrical Engineering, BSE](#)

[Electrical Engineering \(Electric Power and Energy Systems\), BSE](#)

[Mechanical Engineering, BSE](#)

Acceptance to the graduate program requires a separate application. Students typically receive approval to pursue the accelerated master's during the junior year of their bachelor's degree program. Interested students can learn about eligibility requirements and [how to apply](#).

Degree requirements

30 credit hours and a thesis, or

30 credit hours including the required capstone courses (SES 510 and SES 599)

Required Core (1 credit hour)

SES 502 Exploring SESE Research (1)

Electives or Research (5 credit hours)

Other Requirements: Astrophysics Sequence (9 credit hours)

AST 521 Stars and Interstellar Medium I (3)

AST 522 Stars and Interstellar Medium II (3)

AST 591 Seminar: Astrophysics (2)

SES 501 SESE Colloquium (1)

Other Requirements: Galaxies and Cosmology Sequence, pick one (3 credit hours)

AST 531 Galaxies and Cosmology I (3)

AST 532 Galaxies and Cosmology II (3)

AST 533 Galaxies and Cosmology III (3)

Other Requirements: Exoplanets and Planetary Science Sequence, pick one (3 credit hours)

AST 598 Topic: Origins of Solar Systems (3)

AST 598 Topic: Exploring Exoplanets (3)

SES 598 Topic: Water in the Solar System (3)

Other Requirements: Instrumentation and Techniques Sequence, pick one (3 credit hours)

AST 552 Astronomical Instrumentation and Data Analysis (3)

SES 598 Topic: An Introduction to Astro-statistics (3)

SES 598 Topic: Spectroscopy for Astrophysics (3)

SES 598 Topic: Introductory Radio Astronomy (3)

Culminating Experience (6 credit hours)

SES 510 Graduate Exploration Project I (3) and SES 511 Graduate Exploration II (3) or SES 599 Thesis (6)

Additional Curriculum Information

Substitutions for other required courses may be made per department approval.

For their culminating experience, students in an accelerated program complete capstone courses SES 510 and 511. All other students complete SES 599.

Admission requirements

Applicants must fulfill the requirements of both the Graduate College and The College of Liberal Arts and Sciences.

Applicants are eligible to apply to the program if they have earned a bachelor's degree in any field from a regionally accredited institution.

Applicants must have a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in the last 60 hours of their first bachelor's degree program, or they must have a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in an applicable master's degree program.

All applicants must submit:

1. graduate admissions application and application fee
2. official transcripts
3. statement of purpose
4. three letters of recommendation
5. proof of English proficiency

Additional Application Information

An applicant whose native language is not English must provide proof of [English proficiency](#) regardless of their current residency.

Tuition information

When it comes to paying for higher education, everyone's situation is different. Students can learn about [ASU tuition and financial aid](#) options to find out which will work best for them.

Application deadlines

Fall

Spring [expand](#)

[expand](#)

Career opportunities

Professionals with expertise in astrophysics and astronomy are in high demand across all sectors and industries, including remote sensing, data science, building instruments and scientific research. Coding and numerical modeling skills translate across many domains, even beyond astrophysics. Skills in the measurement and analysis of data related to the physics, chemistry and structure of the universe and exoplanetary systems are valuable to businesses and institutions relying on data-driven strategies to explore beyond the Earth and solar system.

This degree program prepares candidates for further graduate study or for careers in related fields such as scientific staff positions at government laboratories, teaching at the community college level and technical positions in industry. Career examples include:

- data scientist
- research astronomer
- telescope operator

Contact information

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