School of Earth and Space Exploration
Arizona State University

Catalog Year: 2025-2026

The BS degree in Earth and Space Exploration with a concentration in Astrophysics requires the following core courses (33 credits):

SES 121 Earth, Solar Sys, & Universe (3) [1]
SES 123 Earth, Solar Sys, & Universe Lab (1) [1]
SES 126 Exploration of the Universe (3) [1]
SES 128 Exploration of the Universe Lab (1) [1]
SES 230: Coding for Exploration (3)
AST 321 Stellar and Planetary Astrophysics (3)
AST 322 Intro Galactic & Extragalactic Astro. (3)
AST 421 Astrophysics I (3)
AST 422 Astrophysics II (3)
AST 498 Astrophysics Seminar (1)[2]
PHY 314 Quantum Physics I (3)
SES 410 Senior Exploration Project I (3)
SES 411 Senior Exploration Project II (3)

[1]For Arizona community college transfer students: AST 111 and AST 112 can be substituted for SES 121/123 and SES 126/128
[2]We will also accept AST 394: Astrophysics Research Seminar

In addition, ONE upper-division 3-credit SES/AST/GLG/PHY elective (3 credits). **Cannot use multiple 1-credit seminars to meet this requirement.** Suggested courses include:

GLG 404 Fundamentals of Planetary Geology (3)
PHY 302 Mathematical Methods in Physics II (3)
PHY 310 Classical Particles, Fields & Matter I (3)
PHY 311 Classical Particles, Fields & Matter II (3)
PHY 312 Mechanics and Electromagnetism (3)
PHY 315 Quantum Physics II (3)
PHY 361 Introductory Modern Physics (3)
PHY 441 Statistical and Thermal Physics (3)
SES 311 Essentials of Astrobiology (3)
SES 350 Eng Syst & Exp Problem Solving (3)
SES 421 Foundations of Planetary Science (3)

Required courses in other related fields include the following (30 credits):

MAT 270 Calculus with Analytic Geometry I (4)*
MAT 271 Calculus with Analytic Geometry II (4)*
MAT 272 Calculus with Analytic Geometry III (4)*
MAT 275 Modern Differential Equations (3)
PHY 150 Physics I (4)**
PHY 151 Physics II (4)**
PHY 201 Mathematical Methods in Physics (3)
PHY 252 Physics III (4)

*SESE will accept Calculus for Engineers I, II and III (MAT 265/266/267) as alternatives although MAT 270/271/272 are encouraged.
**SESE will accept PHY 121/122 and PHY 131/132 as alternatives although PHY 150 and PHY 151 are encouraged.

IMPORTANT NOTES:

- **Students must receive C's or better in all of the above courses in order for them to count toward the major.**
- **The major map for the student's catalog year represents the official catalog for the degree.**
- **Substitutions for any of the requirements above must be approved by a SESE advisor and the student must notify the advisor if substitutions or other requirements are not showing up on the DARS correctly.**

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Updated 6/6/2025 by KWallace