School of Earth and Space Exploration
Arizona State University

Catalog Year: 2025-2026

Earth and Space Exploration (Astrophysics) BS Course Prerequisites

Course	Course Name	Hrs	When	Prerequisites
SES 121	Earth, Solar Sys & Universe	3	F	
SES 123	Earth, Solar Sys & Universe Lab	1	F	Pre-/co-req: SES 121 with C or better if completed
SES 126	Exploration of the Universe	3	S	SES 121 with C or better; Pre-/coreq: MAT 170, 171, 210, 251, 265, or 270 with C or better if completed
SES 128	Exploration of the Universe Lab	1	S	SES 123 with C or better; Pre-/coreq: SES 126 with C or better if completed
SES 230	Coding for Exploration	3	S	AST 111 or GLG 101 or SES 121 with C or better; Pre-/coreq: MAT 265 or 270 with C or better if completed.
AST 321	Stellar & Planetary Astrophysics	3	F	AST 112 or both SES 126 and 128 with C or better; MAT 266 or 271 with C or better; PHY 121 and 122 (or PHY 150) with C or better
AST 322	Intro Galactic & Extragalactic Astrophysics	3	S	AST 112 or both SES 126 and 128 with C or better; MAT 266 or 271 with C or better; PHY 121 and 122 (or PHY 150) with C or better
AST 421	Astrophysics I	3	S	AST 321 or 322 with C or better; PHY 252 with C or better
AST 422	Astrophysics II	3	F	AST 321 or 322 with C or better; PHY 252 with C or better
AST 498*	Astrophysics Seminar	1	F	
PHY 314	Quantum Physics I	3	F/S	PHY 201 with C or better; PHY 252 with C or better, or both PHY 202 and 241 with C or better
SES 410	Senior Exploration Project I	3	F	Earth and Space BS major; ENG 101, 105 or 107; minimum senior standing
SES 411	Senior Exploration Project II	3	S	ENG 101, ENG 105 or ENG 107; SES 410
Major elective	AST/GLG/MAT/PHY/SES elective (see page 2 for suggested options)	3	F, S	Must be upper division (300-499 level) and worth at least 3 credit hours. May not use multiple 1-credit seminars to meet this requirement.
MAT 270*	Calculus with Analytic Geometry I	3	F,S,SS	MAT 170 or 171 with C or better or ALEKS score of 76 or higher; Credit is allowed for only MAT 265 or MAT 270
MAT 271*	Calculus with Analytic Geometry II	3	F,S,SS	MAT 265 or 270 with C or better; Credit is allowed for only MAT 266 or 271
MAT 272*	Calculus with Analytic Geometry III	3	F,S,SS	MAT 266 or 271 with C or better; Credit is allowed for only MAT 267 or 272
MAT 275	Modern Differential Equations	3	F,S,SS	MAT 266 or 271 with C or better; Credit is allowed for only MAT 274 or 275
PHY 150*	University Physics I	3	F,S	MAT 265 or 270 with C or better; Pre-/coreq: MAT 266 or 271 with C or better if completed
PHY 151*	University Physics II	3	F,S	MAT 266 or 271 with C or better; PHY 150 or PHY 121 and PHY 122 with C or better; Pre-/coreq: MAT 267 or 272 with C or better if completed

Codes for offering: F = fall, S =spring, SS =summer session A semicolon (;) equals “AND”

Course	Course Name	Hrs	When	Prerequisites
PHY 201	Mathematical Methods in Physics I	3	F,S	MAT 267 or MAT 272 with C or better; PHY 151 or PHY 131 & PHY 132 with C or better
PHY 252	Physics III	4	F,S	MAT 267 or MAT 272 with C or better; PHY 151 or PHY 131 & PHY 132 with C or better

Suggested upper-division major electives:

Course	Course Name	Hrs	When	Prerequisites
GLG 404	Fundamentals of Planetary Geology	3	F	GLG 101, GLG 102, SES 121, or SES 122 with C or better
PHY 302	Mathematical Methods in Physics II	3	F/S	PHY 201 with C or better
PHY 310	Classical Particles, Fields & Matter I	3	F/S	PHY 201; PHY 252 (or both PHY 241 & PHY 202); pre/coreq: PHY 302; all with C or better if completed
PHY 311	Classical Particles, Fields & Matter II	3	F/S	PHY 302 with C or better; PHY 310 with C or better
PHY 312	Mechanics and Electromagnetism	3	S	PHY 201; PHY 252 (or both PHY 202 and PHY 241); all with C or better
PHY 315	Quantum Physics II	3	F/S	PHY 302 with C or better; PHY 314 with C or better
PHY 361	Introductory Modern Physics	3	F/S	PHY 131 or 151 with C or better; MAT 267 or 272 with C or better
PHY 441	Statistical and Thermal Physics	3	F/S	PHY 311 with C or better; PHY 315 with C or better
SES 311	Essentials of Astrobiology	3	S	BIO 181, CHM 113 or PHY 121; MAT 265 or 270
SES 350	Engineering Systems & Experimental Problem Solving	3	F	MAT 266 or 271; MAT 267, MAT 272, or STP 231; PHY 150, or both PHY 121 and PHY 122; all with C or better
SES 421	Foundations of Planetary Science	3	F	MAT 266 or 271 with C or better; PHY 121 and PHY 122 (or PHY 150) with C or better

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***IMPORTANT NOTES:**

- This handout is intended as a helpful tool for scheduling/planning. Students and advisors should consult the course catalog for official course information as pre-requisites and course offerings are constantly evolving.
- AST 394 – Topic: Astrophysics Research Seminar (spring semesters only) is also acceptable to fulfill the AST 498 requirement.
- PHY 121/122 and PHY 131/132 may be substituted for PHY 150 and PHY 151.
- MAT 265/266/267 can be substituted for MAT 270/271/272.