School of Earth and Space Exploration
Arizona State University

Catalog Year: 2025-2026

Astronomical and Planetary Sciences BS Course Prerequisites

Core Major Requirements					
Course	**Course Name**	**Hours**	**When**	**GS**	**Prerequisites**
AST 111	Intro to Solar Systems Astronomy	4	F, SS	SQ SCIT	
AST 112	Intro to Stars, Galaxies & Cosmology	4	S	SQ SCIT	
SES 106	Habitable Worlds	4	F, S, SS	SQ SCIT	
AST 301	Physics of Astrophysics	3	F, S, C session		MAT 210 or higher with C or better; (PHY 111 and 113 with C or better) or (PHY 121 and 122 with C or better); (PHY 112 and 114 with C or better) or (PHY 131 and 132 with C or better)
AST 321	Intro Planet. & Stellar Astro	3	S, C session		MAT266 or MAT271 with C or better AND PHY122/122 or PHY150 with C or better **OR** AST 301
AST 322	Intro Galactic & Extragalactic Astro	3	F, C session		AST 301 with C or better **OR** MAT 266 or 271 with C or better; PHY 121/122 with C or better or PHY 150 with C or better
SES 350	Engineering Systems and Experimental Problem Solving	3	F, C session		MAT 267, 272, or 275 with C or better; PHY 151 with C or better, or both PHY 131 and 132 with C or better **OR** Pre- or corequisite(s): AST 301
SES 376	Communicating Astronomical and Planetary Sciences I	3	S, A session		AST 111 with C or better; AST 112 with C or better; ENG 102, 105, or 108 with C or better
SES 377	Communicating Astronomical and Planetary Sciences II	3	S, B session		ENG 102, 105, or 108 with C or better; SES 376 with C or better
MAT 210*	Brief Calculus	3	F, S, SS	MA MATH	MAT 117, 119, 170, or 171 with C or better or ALEKS score of 61 or higher; Credit is allowed for only MAT 210 or MAT 251
PHY 111*	General Physics	3	F, S, SS	SQ SCIT	MAT 170 or higher with C or better or ALEKS score of 61 or higher or Corequisite(s): MAT 210 or higher
PHY 113*	General Physics Laboratory	1	F, S, SS	SQ SCIT	Pre- or corequisite(s): PHY 111 with C or better if completed
PHY 112*	General Physics	3	F, S	SQ SCIT	PHY 111 with C or better
PHY 114*	General Physics Laboratory	1	F, S	SQ SCIT	Pre- or corequisite(s): PHY 112 with C or better if completed
LD Electives	Choose 3 courses (see list below)	9-12	Varies		
UD Electives	Choose 2 courses (see list below)	6-7	Varies		

Major Electives					
Course	**Course Name**	**Hours**	**When**	**GS**	**Prerequisites**
BIO 181	General Biology I	4	F, S, SS	SQ SCIT	Credit is allowed for only BIO 181 or BIO 281 or BIO 282
BIO 182	General Biology II	4	F, S, SS	SQ SCIT	BIO 181 with C or better; Credit is allowed for only BIO 182 or BIO 281 or BIO 282
BIO 340	General Genetics	4	F, S, SS		Pre-reqs w/C or btr: non-Molec Biosci&Biotec maj; BIO 181; BIO 182 **OR** non-Molec Biosci&Biotec maj; BIO 181, BIO 281 or MBB 245; MBB 247 **OR** non-Molec Biosci&Biotec maj; BIO 281; BIO 282; Credit allowed for BIO 340 or MBB 347
BIO 345	Evolution	3	F, S, SS		Pre- or corequisite(s): BIO 340 or LSC 347 or MBB 347 with C or better
CHM 113	General Chemistry I	4	F, S, SS	SQ SCIT	CHM 101 with C or better or ALEKS score of 61 or higher **OR** Pre- or coreq(s): MAT 170, 171, 210, 251, 265 or 270 with C or better if completed
CHM 114	General Chemistry for Engineers	4	F, S, SS	SQ SCIT	CHM 101 with C or better or ALEKS score of 61 or higher **OR** Pre- or coreq(s): MAT 170, 171, 210, 251, 265, or 270 with C or better if completed
CHM 116	General Chemistry II	4	F, S, SS	SQ SCIT	CHM 113, 114, or 117 with C or better
GLG 101	Introduction to Geology I	3	F, S, SS	SQ SCIT	None
GLG 103	Introduction to Geology Lab	1	F, S, SS	SQ SCIT	None
GLG 108	Water Planet	4	F, S, SS	SQ SCIT	Credit is allowed for only GLG 108 or SOS 182
MAT 275	Modern Differential Equations	3	F, S, SS	MA MATH	MAT 266 or 271 with a C or better; Credit is allowed for only MAT 274 or 275
MAT 343	Applied Linear Algebra	3	F, S, SS		MAT 266 or 271 with C or better; Credit is allowed for only MAT 342 or MAT 343
MCO 307	The Digital Audience	3	F, S, SS		minimum 2.00 GPA
MCO 335	Social Media	3	F, SS		minimum 2.00 GPA; Students may not earn credit for both MCO 335 and MCO 435
MCO 425	Digital Media Literacy I	3	F, SS		minimum 2.00 GPA; Credit is allowed for only MCO 425 or MCO 494 (Digital Media Literacy)

PHI 314	Philosophy of Science	3	F, S, SS	HU HUAD	Credit is allowed for only HPS 314 or PHI 314
PHY 201	Mathematical Methods in Physics I	3	F, S	CS MATH	MAT 267 or 272 with C or better; PHY 131 with C or better; PHY 132 with C or better **OR** MAT 267 or 272 with C or better; PHY 151 with C or better
PHY 241	University Physics III	3	F, S		PHY 131 or 151
PHY 302	Mathematical Methods in Physics II		F, S		PHY 201 with C or better
PHY 310	Classical Particles, Fields, and Matter I	3	S		With C or better: (PHY 201; PHY 252) or (PHY 201; PHY 202; PHY 241); Corequisite(s): PHY 302
PHY 311	Classical Particles, Fields, and Matter II	3	F		PHY 302 with C or better; PHY 310 with C or better
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
PHY 315	Quantum Physics II	3	S		PHY 302 with C or better; PHY 314 with C or better
PHY 334	Advanced Laboratory I	3	F, S	L	ENG 101, 105, or 107 with C or better; MAT 267 or 272 with C or better; PHY 151 (or PHY 131 and 132) with C or better; Pre- or corequisite(s): PHY 314, 361, CHM 345, or EEE 434 with C or better if completed
PHY 361	Introductory Modern Physics	3	F, S		PHY 131 or 151 with C or better; MAT 272 or 267 with C or better
PHY 412	Classical Particles, Fields, and Matter III	3	F		PHY 311 with C or better
PHY 441	PHY 441: Statistical and Thermal Physics	3	F		PHY 311 with C or better; PHY 315 with C or better
TWC 401	Fundamentals of Technical Comm	3	F, S, SS	L	ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 401 or TWC 501
TWC 446	Technical and Scientific Reports	3	F, S, SS	L	ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only TWC 446 or TWC 546
SES 107	A Solar System Journey	3	F, S	SG SCIT	Credit is allowed for only SES 107 or SES 194 (A Solar System Journey)
SES 141	Energy in Everyday Life	3	F, S, SS	SQ SCIT	Credit is allowed for only SES 141 or SES 194 (Energy in Everyday Life)
SES 225	Global Biogeochemical Cycles	3	S		BIO 100, BIO 182, BIO 282, or SES 220 with C or better; CHM 101, or both CHM 107 and 108, or CHM 113, or CHM 114 with C or better; GLG 108, or both GLG 110 and 111, or both SES 121 and 123 with C or better
STP 226	Elements of Statistics	3	F, S, SS	CS QTRS	MAT 117 or 142 or other course meeting General Studies MA requirement with C or better or ALEKS score of 61 or higher

Codes for offering: F = fall, S =spring, SS =summer A semicolon (;) equals “AND” A bolded or (**OR)** equals a separate alternative list of requisites

***Special notes:**

- This handout is intended as a helpful tool for scheduling planning. However, students and advisors should consult the course catalog for official course information as pre-requisites and course offerings are subject to change.
- Students who wish to pursue a technical career should take the full traditional calculus sequence MAT 265/266/267 or MAT 270/271/272 and calculus-based physics (PHY 121/122 and PHY 131/132).
- MAT 251, MAT 265 or MAT 270 can be substituted for MAT 210.
- PHY121/122 and PHY131/132 may be substituted for PHY 111/113 and PHY 112/114.
- Students who wish to apply to graduate school in a related area are encouraged to do a concurrent physics degree.