School of Earth and Space Exploration
Arizona State University

Catalog Year: 2025-2026

Earth and Space Exploration concentration in Exploration Systems Design course information

Course prefix	Course Name	Hrs	When	Prerequisites
SES 100	Introduction to Exploration	3	F	ALEKS score of 61 or higher, or Pre- or corequisite(s): MAT 170, 171, 210, 251, 265, or 270 with C or better if completed
SES 121	Earth, Solar System & Universe	3	F	
SES 123	Earth, Solar System & Universe Lab	1	F	Pre/co-req: SES 121 with C or better if completed
Term 2 intro SES classes – select either SES 122 and 124 OR SES 126 and 128				
SES 122	History of Earth & Solar System	3	S	SES 121 with C or better
SES 124	History of Earth & Solar System Lab	1	S	SES 123 with C or better; Pre/co-req SES 122 with C or better if completed
SES 126	Exploration of the Universe	3	S	SES 121 with C or better; Pre- or corequisite(s): 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/co-req SES 126 with C or better if completed
EEE 202	Circuits I	4	F,S,SS	Pre/co-reqs: MAT 274 or 275 with C or better if completed; PHY 131 with C or better if completed; Must be a degree-seeking student
MAE 201*	Mechanics of Particles and Rigid Bodies I: Statics	3	F,S,SS	MAT 266 or 271 with C or better; PHY 121 with C or better; Credit is only allowed for MAE 201 or MAE 212
SES 330	Electronics Instrumentation	4	S	EEE 202 with C or better; PHY 131 and 132 (or PHY 151) with C or better
SES 350	Engineering Systems and Experimental Problem Solving	3	F	MAT 266 or 271; MAT 267, MAT 272, or STP 231 with C or better; PHY 121 and 122 (or PHY 150) with C or better
SES 405	Exploration Systems Engineering	3	S	MAT 266 or 271 with C or better; PHY 121 and 122 (or PHY 150) with C or better
SES 410	Senior Exploration Project I	3	F	Earth and Space Exploration BS major; ENG 101, 105 or 107 with C or better; minimum senior standing
SES 411	Senior Exploration Project II	3	S	ENG 101, ENG 105 or ENG 107; SES 410
CHM 114**	General Chemistry for Engineers	4	F,S,SS	CHM 101 with C or better, or ALEKS score of 61 or higher, OR Pre- or corequisite(s): MAT 170, 171, 210, 251, 265, or 270 with C or better if completed

*We will accept MAE 212 if you completed the course at ASU prior to 2017, or if you have earned direct equivalency for MAE 212 from transfer coursework. Please notify your advisor if this is the case.

**Students who complete both CHM 113 and CHM 116 may substitute CHM 116 for CHM 114.

Course prefix	Course Name	Hrs	When	Prerequisites
MAT 265/270	Calculus 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 266/271	Calculus II	3	F,S,SS	MAT 265 or 270 with C or better; Credit is allowed for only MAT 266 or 271
MAT 267/272	Calculus 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 121	University Physics I: Mechanics	3	F,S,SS	MAT 265 or 270 with C or better; Pre- or corequisite(s): MAT 266 or 271 with C or better if completed
PHY 122	University Physics Laboratory I	1	F,S,SS	Pre- or corequisite(s): PHY 121 with C or better if completed
PHY 131	University Physics II: Elec.& Mag.	3	F,S,SS	MAT 266 or 271 with C or better; PHY 121 or PHY 150 with C or better; Pre- or corequisite(s): MAT 267 or 272 with C or better if completed
PHY 132	University Physics Laboratory II	1	F,S,SS	Pre- or corequisite(s): PHY 131 with C or better if completed

SES/AST/GLG approved electives: choose from suggested classes below or obtain advisor approval for other options.

Course prefix	Course Name	Hrs	When	Prerequisites
AST 321	Stellar and Planetary Astrophysics	3	F	All with a C or better: AST 112 or both SES 126 and 128; MAT 266 or 271; PHY 121 and 122 (or PHY 150)
AST 322	Intro to Galactic and Extragalactic Astrophysics	3	S	All with a C or better: AST 112 or both SES 126 and 128; MAT 266 or 271; PHY 121 and 122 (or PHY 150)
GLG 321	Mineralogy	3	F	All with a C or better: CHM 113 (or both CHM 111 and 117 or 114); MAT 170, 210, 265 or 270
GLG 404	Fundamentals of Planetary Geology	3	F	GLG 101, GLG 102, SES 121, or SES 122 with C or better
GLG 424	Petrology	3	S	GLG 321 with C or better
GLG 471	Hydrology	3	F	CEE 341 or MEE 340 or GLG 362 with C or better
SES 307	Space Works I	3	F	Pre- or corequisite(s): MAT 265 or 270 with C or better if completed
SES 311	Essentials of Astrobiology	3	S	BIO 181 (188), CHM 113 or PHY 121; MAT 265 or 270
SES 407	Space Works II	3	S	SES 307 with C or better
SES 421	Foundations of Planetary Science	3	F	All with C or better: MAT 266 or 271 (or AST 301); PHY 121 and PHY 122 (or PHY 150)

Codes for offering: F = fall, S =spring, SS =summer session

A semicolon (;) equals “AND”

SPECIAL NOTE: This handout is intended as a helpful tool for schedule planning. Students and advisors should consult the course catalog for official course information as pre-requisites and course offerings are constantly evolving.