School of Earth and Space Exploration
Arizona State University

**Catalog Year: 2025-2026**

# Earth and Space Exploration BS Course Prerequisites

| Course prefix | Course Name | Hours | When Offered | Prerequisites |
|---|---|---|---|---|
| SES 121 | Earth, Solar System and Universe | 3 | F | |
| SES 123 | Earth, Solar System and 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 the Earth and Solar System | 3 | S | SES 121 with C or better |
| SES 124 | History of the Earth and Solar System Lab | 1 | S | SES 123 with C or better; Pre- or co-requisite: SES 122 with C or better if completed |
| SES 126 | Exploration of the Universe | 3 | S | SES 121 with C or better; Pre- or co-requisite: 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- or co-requisite: 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- or coreq: MAT 265 or 270 with C or better if completed |
| SES 421 | Foundations of Planetary Science | 3 | F | MAT 266 or 271 (or AST 301) with C or better; PHY 121 and PHY 122 (or PHY 150) with C or better |
| SES 401 | SESE Colloquium | 1 | F, S | Minimum 45 hours |
| 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; SES410 |
| AST/GLG/SES electives (2) | Various course options | 6 | F, S | Two courses minimum worth 3 credits each. Courses must be upper division (300-499 level) |

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| Students must complete FOUR of the following SES branch options (12 credits total): | | | | |
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| AST 321 | Stellar and Planetary Astrophysics | 3 | F | All with C or better: AST 112 or both SES 126 and 128; MAT 266 or 271 (or AST 301); PHY 121 and 122 (or PHY 150) |
| AST 322 | Intro to Galactic and Extragalactic Astrophysics | 3 | S | All with C or better: AST 112 or both SES 126 and 128; MAT 266 or 271 (or AST 301); PHY 121 and 122 (or PHY 150) |
| GLG 310 | Structural Geology | 3 | F | GLG 101 or SES 121 with C or better; MAT 170, 171, 210, 251, 265, or 270 with C or better |
| GLG 321 | Mineralogy | 3 | F | CHM 113 or CHM 114 (or both CHM 111 and 117) with C or better; MAT 170, 210, 265 or 270 with C or better |
| GLG 418 | Geophysics | 3 | F | All with C or better: MAT 272 or 267; PHY 131 and 132 (or PHY 151) |
| 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; Credit is allowed for only CEE 440 or CEE 545 or CEE 598 (Hydrology) or GLG 471 or GLG 490 (Hydrology) |
| GLG 481 | Geochemistry | 3 | F, S | BCH 341, CHM 341, CHM 346, or GLG 321 with C or better; Credit is allowed for only CHM 481 or GLG 481 |
| GLG 490 | Special Topics: Remote Sensing | 3 | F | Meant for students with junior or senior standing who have completed GLG 321 with a C or better.<br>This course is not taught every fall. Please check class search to see if it is being offered in the current term. |
| SES 311 | Essentials of Astrobiology | 3 | S | BIO 181 (or 188), CHM 113 or PHY 121; MAT 265 or MAT 270 |
| SES 330 | Electronics Instrumentation | 4 | F | 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 or 272 or STP 231 with C or better; both 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 |

| Related math and science requirements: | | | | |
|---|---|---|---|---|
| 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 co-requisite(s): MAT 170, 171, 210, 251, 265, or 270 with C or better if completed |
| MAT 265 or MAT 270 | Calculus for Engineers I or Calculus with Analytic Geometry I | 3-4 | 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 or MAT 271 | Calculus for Engineers II or Calculus with Analytic Geometry II | 3-4 | F, S, SS | MAT 265 or 270 with C or better; Credit is allowed for only MAT 266 or 271 |
| MAT 267 or MAT 272 | Calculus for Engineers III or Calculus with Analytic Geometry III | 3-4 | 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 MAT 271 with a 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 MAT 270 with a C or better; Pre or Co-req: MAT 266 or MAT 271 with C or better if completed |
| PHY 122 | University Physics Laboratory I | 1 | F, S, SS | Pre- or Co-requisite: PHY 121 with C or better if completed |
| PHY 131 | University Physics II: Electricity and Magnetism | 3 | F, S, SS | MAT 266 or 271 with C or better; PHY 121 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 Co-req: PHY131 with C or better if completed |

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

A semicolon (;) equals “AND”

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

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