

2024 - 2025 Major Map

Earth and Space Exploration (Astrophysics), BS

School/College: The College of Liberal Arts and Sciences
LASESABS

Term 1 0 - 15 Credit Hours Critical course signified by ⚠	Hours	Minimum Grade	Notes
⚠ MAT 270: Calculus with Analytic Geometry I (MATH OR MA)	4	C	<ul style="list-style-type: none"> ASU 101 or college-specific equivalent First-Year Seminar required of all first-year students. SESE will accept Calculus for Engineers I, II and III (MAT 265/266/267) as alternatives although MAT 270, 271 and 272 are encouraged. SESE majors are strongly encouraged to meet with their faculty mentor at least once during their first and second year. Students can find their faculty mentor on the SESE advising website. Select your Career Interest Communities and play me3@ASU. Activate your Handshake account and build out your profile.
ENG 101 or ENG 102: First-Year Composition OR			
ENG 105: Advanced First-Year Composition OR	3	C	
ENG 107 or ENG 108: First-Year Composition			
LIA 101: Student Success in The College of Liberal Arts and Sciences	1		
SES 121: Earth, Solar System and Universe (SCIT OR SQ) AND			
SES 123: Earth, Solar System and Universe Laboratory (SCIT OR SQ)	4	C	
Social and Behavioral Sciences (SOBE)	3		
Term hours subtotal:	15		




Term 2 15 - 30 Credit Hours Critical course signified by ⚠	Hours	Minimum Grade	Notes
⚠ MAT 271: Calculus with Analytic Geometry II (MATH OR MA)	4	C	<ul style="list-style-type: none"> SESE will accept Calculus for Engineers I, II and III (MAT 265/266/267) as alternatives although MAT 270, 271 and 272 are encouraged. SESE will accept PHY 121/122 and PHY 131/132 as alternatives although PHY 150 and PHY 151 are encouraged. SESE majors are strongly encouraged to meet with their faculty mentor at least once during their first and second year. Students can find their faculty mentor on the SESE advising website. Join a student club or professional organization. Create a first draft resume.
⚠ PHY 150: Physics I (SCIT OR SQ)	4	C	
ENG 101 or ENG 102: First-Year Composition OR			
ENG 105: Advanced First-Year Composition OR	3	C	
ENG 107 or ENG 108: First-Year Composition			
SES 126: Exploration of the Universe AND SES 128: Exploration of the Universe Lab	4	C	
⚠ Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
Milestone: Complete SESE faculty mentoring.			
Term hours subtotal:	15		

Term 3 30 - 44 Credit Hours Critical course signified by ⚠	Hours	Minimum Grade	Notes
⚠ MAT 272: Calculus with Analytic Geometry III (MATH OR MA)	4	C	<ul style="list-style-type: none"> SESE will accept Calculus for Engineers I, II and III (MAT 265/266/267) as alternatives although MAT 270, 271 and 272 are encouraged. SESE will accept PHY 121/122 and PHY 131/132 as alternatives although PHY 150 and PHY 151 are encouraged.
⚠ PHY 151: Physics II (SCIT OR SQ)	4	C	
SES 230: Coding for Exploration (QTRS OR CS)	3	C	
Humanities, Arts and Design (HUAD)	3		
⚠ Complete First-Year Composition requirement.			



Complete Mathematics (MATH) requirement.



Term hours subtotal: 14

- SESE majors are strongly encouraged to meet with their faculty mentor at least once during their first and second year. Students can find their faculty mentor on the [SESE advising website](#).
- Develop your [skills](#).

Term 4 44 - 60 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 PHY 201: Mathematical Methods in Physics I (MATH OR CS)	3	C	<ul style="list-style-type: none"> • SESE majors are strongly encouraged to meet with their faculty mentor at least once during their first and second year. Students can find their faculty mentor on the SESE advising website. • Explore an internship.
 PHY 252: Physics III (SCIT OR SQ)	4	C	
Science and Society Elective	3	C	
Humanities, Arts and Design (HUAD)	3		
Sustainability (SUST)	3		
Milestone: Complete SESE faculty mentoring.			
Term hours subtotal:	16		

Term 5 60 - 75 Credit Hours Necessary course signified by 	Hours	Minimum Grade	Notes
 AST 321: Stellar and Planetary Astrophysics	3	C	<ul style="list-style-type: none"> • Students should meet with faculty to discuss research opportunities
MAT 275: Modern Differential Equations (MATH OR MA)	3	C	
PHY 314: Quantum Physics I	3	C	
Global Communities, Societies and Individuals (GCSI)	3		
Governance and Civic Engagement (CIVI)	3		
Term hours subtotal:	15		

Term 6 75 - 90 Credit Hours Necessary course signified by 	Hours	Minimum Grade	Notes
 AST 322: Introduction to Galactic and Extragalactic Astrophysics	3	C	<ul style="list-style-type: none"> • Explore a research or internship opportunity. In order to earn credits for an internship, students should work with their SESE advisor for approval. Students who hope to go to graduate school should consider getting involved in research. Students can talk to faculty mentors about how to find research opportunities. • Students interested in graduate school should be researching programs and preparing application materials. Continue to meet with faculty for input along the way. • Students should meet with an advisor to do a graduation check. • Use Handshake to research employment opportunities.
AST 421: Astrophysics I	3	C	
Upper Division Astrophysics Major Elective	3	C	
Upper Division Elective	3		
Upper Division Elective OR SES 484: Internship OR SES 499: Individualized Instruction	3		
Term hours subtotal:	15		

Term 7 90 - 106 Credit Hours Necessary course signified by 	Hours	Minimum Grade	Notes
 SES 410: Senior Exploration Project I	3	C	<ul style="list-style-type: none"> • Students interested in graduate school should be researching programs and preparing application materials. Continue to meet with faculty for input along the way. • If not already completed, students should meet with an advisor to do a graduation check. • Apply for full-time career opportunities.
AST 422: Astrophysics II	3	C	
AST 498: Pro-Seminar	1	C	
American Institutions (AMIT)	3		
Upper Division Elective	3		
Elective	3		
Term hours subtotal:	16		

Term 8 106 - 120 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ SES 411: Senior Exploration Project II	3	C	
Upper Division Science and Society Elective	3	C	
Complete 3 courses:			
Upper Division Elective	8		
Term hours subtotal:	14		

- All students pursuing a BS or BSP degree in The College of Liberal Arts and Sciences must complete two courses from the Science and Society list found at <https://thecollege.asu.edu/student-resources/science-society>. At least one of the two courses must be upper division and students must earn a C or better in the courses. Both Science and Society courses (i.e., all six credits) may count towards any major, minor, related fields, and ASU General Studies requirements.
- The suggested list of electives are highly recommended but not required. Students who plan to take the physics GRE are encouraged to choose electives from the PHY options. There is also an option to choose an elective in other GLG, AST, SES, PHY or MAT areas as long as the subject is relevant to astrophysics and the course is upper division. Students should consult with a SESE advisor if they have questions about which courses would satisfy this requirement.

Hide Course List(s)/Track Group(s)

Upper Division Astrophysics Major Elective
GLG OR AST OR SES OR PHY OR MAT Upper Division Elective
GLG 404: Fundamentals of Planetary Geology
PHY 302: Mathematical Methods in Physics II
PHY 310: Classical Particles, Fields, and Matter I
PHY 311: Classical Particles, Fields, and Matter II
PHY 312: Mechanics and Electromagnetism
PHY 315: Quantum Physics II
PHY 361: Introductory Modern Physics
PHY 441: Statistical and Thermal Physics
SES 311: Essentials of Astrobiology: Exploration for Life in the Universe
SES 350: Engineering Systems and Experimental Problem Solving (QTRS OR CS)
SES 421: Foundations of Planetary Science

- **Total Hours:** 120
- **Upper Division Hours:** 45 minimum
- **University Undergraduate Graduation Requirements**

Notes:

Mathematics Placement Assessment score determines placement in first mathematics course.

Please keep in mind that the applicability of a specific transfer course toward an ASU degree program depends on the requirements of the department, division, college or school in which you are enrolled at ASU. Transfer agreements that guarantee the completion of university level requirements do not necessarily meet college and major requirements. Please consult with an advisor for more information.

General Studies designations listed next to courses on the major map were valid for the 2024 - 2025 academic year. Please refer to the course catalog for current General Studies designations at time of class registration. General Studies credit is applied according to the designation the course carries at the time the class is taken.