

# EARTH AND SPACE SCIENCE (BS) - ASTROPHYSICS AND PLANETARY GEOLOGY TRACK

## Program Map

Course	Title	Credit Hours
<b>First Year</b>		
<b>Fall</b>		
ENGL 1101	English Composition I (minimum grade of C)	3
MATH 1113	Pre-Calculus (minimum grade of C) <sup>1</sup>	4
CHEM 1211	Principles of Chemistry I (minimum grade of C)	3
CHEM 1211L	Principles of Chemistry I Lab (minimum grade of C)	1
ASTR 1105	Descriptive Astronomy: The Solar System (minimum grade of C)	3
ASTR 1305	Descriptive Astronomy Lab (minimum grade of C)	1
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
ENGL 1102	English Composition II (minimum grade of C)	3
MATH 1131	Calculus with Analytic Geometry I (minimum grade of C)	4
CHEM 1212	Principles of Chemistry II	3
CHEM 1212L	Principles of Chemistry II Lab	1
ASTR 1106	Descriptive Astronomy: Stars and Galaxies (minimum grade of C)	3
Area B2	ITDS 1779 (2), LEAD 1705 (2), PERS 1506 (1; may be repeated with different topic), PERS 1507 (2)	1
<b>Credit Hours</b>		<b>15</b>
<b>Second Year</b>		
<b>Fall</b>		
Area F Lab Science	ATSC 1112, ENVS 1105, ENVS 1205K, GEOL 1110, GEOL 1122 or BIOL 1215K (minimum grade of C)	3-4
GEOL 1121	Introductory Geoscience I: Physical Geology (minimum grade of C)	3
GEOL 1121L	Introductory Geoscience I: Physical Geology Lab (minimum grade of C)	1
Area B1	COMM 1110 Public Speaking or foreign language 1001, 1002, 2001, 2002	3
MATH 1132	Calculus with Analytic Geometry II <sup>2</sup>	4
<b>Credit Hours</b>		<b>14-15</b>
<b>Spring</b>		
PHYS 2211	Principles of Physics I (minimum grade of C)	3
PHYS 2311	Principles of Physics I Lab (minimum grade of C)	1

HIST 2111 or HIST 2112	U. S. History to 1865 or U. S. History since 1865	3
AREA C	Fine Arts	3
AREA E	Behavioral Science	3
KINS 1106 or PHED 1205	Lifetime Wellness or Concepts of Fitness	2

**Credit Hours 15**

### Third Year

#### Fall

PHYS 2212	Principles of Physics II (minimum grade of C)	3
PHYS 2312	Principles of Physics II Lab (minimum grade of C)	1
ASTR 3105	Physics, Chemistry, and Geology of the Solar System (minimum grade of C) <sup>4</sup>	3
Area E	World Cultures	3
AREA H	Program Electives	3-4
PEDS Physical Education		1

**Credit Hours 14-15**

#### Spring

GEOL 3201	Mineralogy and Petrology I (minimum grade of C) <sup>3</sup>	4
PHYS 3100	Waves and Optics (minimum grade of C) <sup>4</sup>	3
ASTR 3115	Introduction to Astrophysics (minimum grade of C) <sup>4</sup>	3
ENGR 2165	Thermodynamics (minimum grade of C)	3
AREA H	Program Electives	3-4

**Credit Hours 16-17**

### Fourth Year

#### Fall

PHYS 3200	Twentieth Century Physics (minimum grade of C) <sup>4</sup>	4
AREA C	Humanities	3
POLS 1101	American Government	3
AREA H	Program Electives	6-8

**Credit Hours 16-18**

#### Spring

PHYS 4100	Survey of Quantum Mechanics (minimum grade of C) <sup>4</sup>	3
ASTR 3205	Observational Techniques for Astrophysics (minimum grade of C) <sup>4</sup>	4
AREA H	Program Electives <sup>5</sup>	6-8

**Credit Hours 13-15**

**Total Credit Hours 123**

<sup>1</sup> MATH 1113 Pre-Calculus can be replaced by MATH 1131 Calculus with Analytic Geometry I if placement tests allow.

<sup>2</sup> MATH 1132 Calculus with Analytic Geometry II can be replaced by other area H if already taken.

<sup>3</sup> GEOL 3201 Mineralogy and Petrology I is taught every 3 semesters. If not taken in this semester, it will not be offered again until Fall 2026.

<sup>4</sup> The Area G courses ASTR 3105, ASTR 3115, ASTR 3205, PHYS 3100, PHYS 3200, and PHYS 4100 are each taught every 4 semesters. These courses should be taken at the earliest opportunity to avoid graduation delays.

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<sup>5</sup> May take additional Area H Program Electives if needed.

- Area H Program Electives must total to 26 hours, which is 22 hours plus MATH 1132 Calculus with Analytic Geometry II, or 26 hours if MATH 1132 Calculus with Analytic Geometry II is applied to Area D.