

EARTH SCIENCE

Earth Science

The **Earth Science major** is a program leading to the bachelor of arts or bachelor of science.

The bachelor of arts emphasizes an interdisciplinary field and prepares the student primarily for a career in secondary education. Apart from the required and supporting coursework listed below, the B.A. program must satisfy the requirements of the Teacher Education Program. The B.S. program provides a broad overview of geology and supporting sciences. This degree pathway is also suitable for students who may want to pursue a career in secondary education or continue on to graduate school. If a student chooses this option and is interested in secondary education, they should contact Dr. Cinzia Cervato for additional guidance.

Required courses for the B.A. include:

GEOL 100	How the Earth Works	3
or GEOL 101	Environmental Geology: Earth in Crisis	
GEOL 100L	How the Earth Works: Laboratory	1
GEOL 102	History of the Earth	3
GEOL 102L	History of the Earth: Laboratory	1
GEOL 302	Summer Field Studies	6
GEOL 315	Mineralogy and Earth Materials	3
GEOL 315L	Laboratory in Mineralogy and Earth Materials	1
GEOL 316	Optical Mineralogy	1
GEOL 356	Structural Geology and Tectonics	4
GEOL 357	Geological Mapping and Field Methods	1
GEOL 365	Igneous and Metamorphic Petrology	3
GEOL 368	Sedimentary Geology	4
MTEOR 206	Introduction to Weather and Climate	3
ASTRO 120	The Sky and the Solar System	3
ASTRO 150	Stars, Galaxies, and Cosmology	3
And 3 credits of geology electives		3
Total Credits		43

Required supporting courses include:

CHEM 177	General Chemistry I	4
CHEM 177L	Laboratory in General Chemistry I	1
CHEM 178	General Chemistry II	3
CHEM 178L	Laboratory in College Chemistry II	1
PHYS 111	General Physics	5
PHYS 112	General Physics	5

One of the following

MATH 151	Calculus for Business and Social Sciences	3
or MATH 160	Survey of Calculus	
or MATH 165	Calculus I	

One of the following

COM S 107	Windows Application Programming	3
or STAT 101	Principles of Statistics	
or STAT 104	Introduction to Statistics	

And one course in Biology, Botany, or Zoology 3

Total Credits 28

Communication Proficiency requirement: According to the university-wide Communication Proficiency Grade Requirement, students must demonstrate their communication proficiency by earning a grade of C or better in ENGL 250. The department requires a grade of C or better in ENGL 309 or ENGL 314.

ENGL 150	Critical Thinking and Communication	3
ENGL 250	Written, Oral, Visual, and Electronic Composition	3
or ENGL 250H	Written, Oral, Visual, and Electronic Composition: Honors	

One of the following:

ENGL 309	Proposal and Report Writing	3
or ENGL 314	Technical Communication	

Total Credits 9

Required courses for the B.S. include:

GEOL 100	How the Earth Works	3
or GEOL 101	Environmental Geology: Earth in Crisis	
GEOL 100L	How the Earth Works: Laboratory	1
GEOL 102	History of the Earth	3
GEOL 102L	History of the Earth: Laboratory	1
GEOL 302	Summer Field Studies	6
GEOL 315	Mineralogy and Earth Materials	3
GEOL 315L	Laboratory in Mineralogy and Earth Materials	1
GEOL 316	Optical Mineralogy	1
GEOL 356	Structural Geology and Tectonics	4
GEOL 357	Geological Mapping and Field Methods	1
GEOL 365	Igneous and Metamorphic Petrology	3
GEOL 368	Sedimentary Geology	4
GEOL 479	Surficial Processes	3
MTEOR 206	Introduction to Weather and Climate	3

And 8 credits of electives in agronomy, astronomy, environmental science, or other approved areas.	8
Total Credits	45

Required supporting courses include:

CHEM 177	General Chemistry I	4
CHEM 177L	Laboratory in General Chemistry I	1
CHEM 178	General Chemistry II	3
CHEM 178L	Laboratory in College Chemistry II	1
MATH 165	Calculus I	4
MATH 166	Calculus II	4
PHYS 111	General Physics	5
PHYS 112	General Physics	5
COM S 107	Windows Application Programming	3
STAT 101	Principles of Statistics	4
or STAT 104	Introduction to Statistics	
Total Credits		34

Communication Proficiency requirement: According to the university-wide Communication Proficiency Grade Requirement, students must demonstrate their communication proficiency by earning a grade of C or better in ENGL 250. The department requires a grade of C or better in the below communication courses.

ENGL 150	Critical Thinking and Communication	3
ENGL 309	Proposal and Report Writing	3
or ENGL 314	Technical Communication	
or ENGL 302	Business Communication	
or JL MC 347	Science Communication	
Total Credits		6

Earth Science, B.A.

Potential pathway for the B.A. in Earth Science degree:

Freshman

Fall	Credits Spring	Credits Summer	Credits
ENGL 150	3 GEOL 102	3 World Language if needed	8
LIB 160	1 GEOL 102L	1	
GEOL 100	3 CHEM 178	3	
or 101			
GEOL 100L	1 CHEM 178L	1	
CHEM 177	4 ASTRO 120	3	
CHEM 177L	1 MTEOR 206	3	

MATH 151, 160, or 165	3-4 HIST 222 or POL S 215	3
	EDUC 219	1
	16-17	18

Sophomore

Fall	Credits Spring	Credits
ENGL 250	3 GEOL 365	3
GEOL 315	3 GEOL 356	4
GEOL 315L	1 GEOL 357X Geologic Mapping and Field Methods	1
GEOL 316	1 PHYS 112	5
PHYS 111	5 EDUC 202	3
ASTRO 150	3 PSYCH 230 or HD FS 102	3
EDUC 204	3 C I 280M	2

Take PRAXIS-I by October 15	**Apply to Teacher Education Program 1st week**	
	19	21

Junior

Fall	Credits Spring	Credits Summer	Credits
GEOL 368	4 ENGL 309 or 314	3 GEOL 302	6
EDUC 333	3 COMST 102 or SP CM 212 or SP CM 313 or THTHR 358	3	
Humanities Choice ¹	3 EDUC 419	3	
EDUC 347	3 EDUC 468K	2	
EDUC 418	3 Humanities Choice	3	

EDUC 468J	2 COM S 107 or STAT 101 or STAT 104	3	
	18	17	6

Senior

Fall	Credits Spring	Credits	
EDUC 406	3 EDUC 417J	14	
Humanities Choice	3		
Geology Choice	3		
Social Science/ Humanities Choice ¹	3		
SP ED 401	3		
Biology Choice ²	3		
Apply to Student Teach.			
	18	14	

Students in all ISU majors must complete a three-credit course in U.S. diversity and a three-credit course in international perspectives. Check (<http://www.registrar.iastate.edu/courses/div-ip-guide.html>) for a list of approved courses.

LAS majors require a minimum of 120 credits, including a minimum of 45 credits at the 300/400 level in addition to the LAS world language and cultures requirement. At least 8 credits in the major from 300+ courses must earn grade C or better. The average grade of all courses in the major must be 2.0 or higher.

¹ Choice depends on whether American History (humanities) or American Government (Social Science) was chosen earlier.

² Choose from list of approved courses available from an adviser.

Earth Science, B.S.

Potential pathway for the B.S. in Earth Science degree:

Freshman

Fall	Credits Spring	Credits	
ENGL 150	3 GEOL 102	3	
GEOL 100 or 101	3 GEOL 102L	1	
GEOL 100L	1 CHEM 178	3	

CHEM 177	4 CHEM 178L	1	
CHEM 177L	1 MATH 166	4	
MATH 165	4 Arts-and- Humanities Choice	3	
LIB 160	1		
	17	15	

Sophomore

Fall	Credits Spring	Credits	
ENGL 250	3 GEOL 365	3	
GEOL 315	3 Arts-and- Humanities Choice	3	
GEOL 315L	1 PHYS 112	5	
GEOL 316	1 STAT 101 or 104	3-4	
PHYS 111	5 MTEOR 206	3	
COM S 107	3		
	16	17-18	

Junior

Fall	Credits Spring	Credits Summer	Credits
GEOL 479	3 GEOL 356	4 GEOL 302	6
GEOL 368	4 GEOL 357X Geologic Mapping and Field Methods	1	
Agron/ Astronomy/ EnSci Choice ¹	3 Foreign Language	3-4	
Foreign Language	3-4 Agron/ Astronomy/ EnSci Choice ¹	3	
		Social- Science Choice	3

	13-14	14-15	6
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Senior

Fall	Credits Spring	Credits	
Agron/ Astronomy/ EnSci Choice ¹	2 Electives	9	

Arts-and- Humanities Choice	3 Arts-and- Humanities Choice	3
Social Science Choice	3 Social- Science Choice	3
ENGL 309 or 302 or 314 or JL MC 347	3	
Elective	3-4	
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	14-15	15

Students in all ISU majors must complete a three-credit course in U.S. diversity and a three-credit course in international perspectives. Check (<http://www.registrar.iastate.edu/courses/div-ip-guide.html>) for a list of approved courses.

LAS majors require a minimum of 120 credits, including a minimum of 45 credits at the 300/400 level. At least 8 credits in the major from 300+ courses must earn grade C or better. The average grade of all courses in the major must be 2.0 or higher. You must also complete the LAS foreign language requirement.

¹ Choose from list of approved courses available from an adviser or departmental office.