Earth Science - Teaching B.A.

Earth Science - Teaching Major

The B.A. Earth Science - Teaching major requires a minimum of 120 total hours to graduate. This total includes UNIFI/General Education requirements, the Professional Experiences requirements, Educator Essentials requirements, and the following specified major requirements, to complete the minimum of 120 hours.

This major leads to endorsement #153: 5-12 Earth Science.

Required		
Chemistry and Biochemistry:		
CHEM 1110	General Chemistry I	4
Earth Science:		
EARTHSCI 1100	Astronomy	3
EARTHSCI 1110	Astronomy Laboratory	1
EARTHSCI 1200	Elements of Weather	3
EARTHSCI 1210	Elements of Weather Laboratory	1
EARTHSCI 1300	Introduction to Geology	4
EARTHSCI 1320	Earth History	4
EARTHSCI 3120/5120	Planets	3
EARTHSCI 3210/5210	Meteorology	4
Physics:		
PHYSICS 1511	General Physics I	4
Electives in earth science: 3000/4000-level courses *		**11**
Total Hours		**42**

* Excluding the following Courses: EARTHSCI 3186/4186/5186 "Studies in", EARTHSCI 3420/5420, EARTHSCI 3430, EARTHSCI 4198 "Independent Study".

Professional Experiences

Required:		
EDUC 2385	Teaching Methods l: Secondary Science *, **	3
EDUC 2485	Teaching Internship l: Secondary Science	3
EDUC 3585/5585	Teaching Methods ll: Secondary Science *	3
EDUC 3685/5685	Teaching Internship ll: Secondary Science	3
EDUC 4138	Secondary School Teaching	12
Total Hours		**24**

* A grade of C (2.00) or higher is required for all Methods courses.
** Earth Science Teaching majors can count EDUC 2385 Teaching Methods l: Secondary Science for category 5 of Educator Essentials.

Educator Essentials

Required: *

Select one of the following in each category:		
Category 1: The Learner		**3**
EDPSYCH 1500	Reflections on Learning	
EDPSYCH 2068	Development and Learning in Sociocultural Contexts	
EDPSYCH 2100	Creativity and Higher Order Thinking in the Classroom	
SOCFOUND 2243	Rethinking the Learning Society: Education and Its Future(s)	
Category 2: Social Contexts of Learning		**3**
SOCFOUND 2119	Social & Cultural Foundations of Education	
SOCFOUND 2134	A Modern History of Education in the United States	
SOCFOUND 2334	Education Policy and Politics of Education	
TESOL 2015	Language Today	
Category 3: Education for All		**3**
KINES 4152	Adapted Physical Education	
SOCFOUND 3334	Education, Power, and Change	
SOCFOUND 3434	Social Movements and Education	
SPIE 3140	Interdisciplinary and Intersectional Study of Education for All	
SPIE 3150	Meeting the Needs of Diverse Learners in Classrooms	
TESOL 3710	Content Area Strategies for English Language Learners	
Category 4: The Classroom Environment		**3**
EDPSYCH 3200	Deeper Motivation and the Highly Engaged Classroom	
EDPSYCH 3300	Level Up: Gamified Learning Environments	
ECIE 4151	Early Childhood Curriculum Development and Organization	
RTNL 3360	Playful Learning and Project-Based Experiences: Techniques for Ed and Recreational Environments	
SOCFOUND 3219	Critical Perspectives on Technology and Education	
Category 5: Effective Pedagogy		**3**
ARTED 4600	Expressive Learning Assessment	
LRNTECH 3600	Technology, Pedagogy, and Learning in the Digital Age	
MEASRES 3510	Assessment for Learning	
TEACHING 3500	Effective Teaching through Differentiation, Technology and Assessment	
Category 6: The Professional Educator		**3**

ECIE 3149	Child, Family, School and Community Relationships	
SOCFOUND 3519	Teacher Leadership & Educational Change	
TEACHING 3177	Collaborative Partnerships for Educators	
Total Hours		**18**

* A grade of C (2.00) or higher is required in each Educator Essentials course.

Four-Year Plan

Earth Science-Teaching, B.A.

This is a sample plan of study with a suggested sequencing of classes for the major. University electives may be applied to earn additional academic majors, minors, or certificates. Students should regularly meet with their academic advisor to plan their specific semester schedule to include UNIFI/General Education program and/or university elective hours required.

Course	Title	Hour
Freshman		
Fall		
CHEM 1110	General Chemistry I	4
UNIV 1000	First-Year Cornerstone: Integrated Communication I	3
EARTHSCI 1300	Introduction to Geology	4
UNIFI/General Education or University Electives		3
	Hours	**14**
Spring		
EARTHSCI 1320	Earth History	4
PHYSICS 1511	General Physics I	4
UNIV 1010	First-Year Cornerstone: Integrated Communication II	3
Educator Essentials Course		3
UNIFI/General Education or University Electives		3
	Hours	**17**
Sophomore		
Fall		
EARTHSCI 1200	Elements of Weather	3
EARTHSCI 1210	Elements of Weather Laboratory	1
Educator Essentials Course		3
UNIFI/General Education or University Electives		9
	Hours	**16**
Spring		
EARTHSCI 1100	Astronomy	3
EARTHSCI 1110	Astronomy Laboratory	1
EDUC 2385	Teaching Methods l: Secondary Science	3
EDUC 2485	Teaching Internship l: Secondary Science	3
Educator Essentials Course		3
UNIFI/General Education or University Electives		3
	Hours	**16**
Junior		
Fall		
EARTHSCI 3120/5120	Planets	3
Educator Essentials Course		3
UNIFI/General Education or University Electives		6
3000/4000-Level Earth Science Electives**		3
	Hours	**15**
Spring		
EARTHSCI 3210/5210	Meteorology	4
UNIFI/General Education or University Electives		3
Educator Essentials Course		3
3000/4000-Level Earth Science Electives**		5
	Hours	**15**
Senior		
Fall		
EDUC 3585/5585	Teaching Methods ll: Secondary Science	3
EDUC 3685/5685	Teaching Internship ll: Secondary Science	3
UNIFI/General Education or University Electives		6
3000/4000-Level Earth Science Electives**		3
	Hours	**15**
Spring		
EDUC 4138	Secondary School Teaching	12
	Hours	**12**
	Total Hours	**120**

Learning Outcomes

Earth Science-Teaching, B.A.

Goal 1 - Critical Thinking & Data Analysis: Our students will use concepts from Earth and Space Science to critically analyze and interpret scientific data.

- **Outcome 1.1** - Analyze and interpret scientific data to formulate an evidence-based conclusion
- **Outcome 1.2** - Use a variety of mathematical tools and computer software to describe scientific phenomena and answer scientific questions

Goal 2 - Communication: Our students will be able to communicate concepts from Earth and Space Science.

- **Outcome 2.1** - Create a well-written report or paper that summarizes scientific data and draws evidence-based conclusions
- **Outcome 2.2** - Create and deliver a well-constructed oral report that summarizes scientific data and draws evidence-based conclusions

Goal 3 - Content Knowledge and Skills: Our students will apply concepts and theories from Earth and Space Science to the real world.

- **Outcome 3.1** - Describe fundamental theories and concepts in Earth and Space Science
- **Outcome 3.2** - Use concepts and theories from Earth and Space Science to create a model of a complex system
- **Outcome 3.3** - Use concepts and theories from Earth and Space Science to solve a real-world problem
- **Outcome 3.4** - Use scientific equipment to collect valid scientific data.

Goal 4 - Pedagogy: Our students will teach concepts and theories from Earth and Space Science.

- **Outcome 4.1** - Design and teach lessons that incorporate concepts from Earth and Space Science and are aligned with the Iowa Science Teaching Standards.

Related Programs

- Biology - Teaching Minor
- Earth Science B.A.