



Office of
Transfer Relations

Catalog: 2026-2027 University of Wyoming Catalog Program:
Secondary Education, B.A. -Earth Science Education with
Concurrent Major in Environmental Systems Science (ESSE)

Wyoming Transfer Alignment Guide (WyoTAG)

Secondary Education, B.A. -Earth Science Education with Concurrent Major in Environmental Systems Science (ESSE)

This degree program leads to initial teaching licensure (leading to teaching certification); it prepares students to teach earth science in grades 6-12.

Degree Requirements

This degree requires a minimum of 120 credits, 42 of which are upper division credits.

University Studies Program

This degree requires that The University Studies Program 2015 requirements are met before graduation. Some of the courses required for this major fulfill USP requirements, but not all. Students should check their degree evaluations and consult with their assigned academic advisor to discuss their specific course plan.

Course Name	Credits	UW Course in Major	AA/AS/AB/ADN satisfies this USP
C 1-Communication 1 (COM1)	3		X
C 2-Communication 2 (COM2)	3		X
C 3-Communication 3 (COM3)	3	(Must be completed at UW)	
Q-Quantitative Reasoning (Q)	3		X
PN-Physical and Natural World (1) (PN)	3		X
PN-Physical and Natural World (2) (PN)	3		X
H-Human Culture (1) (H)	3		X
H-Human Culture (2) (H)	3		X
V-US & WY Constitution (V)	3		X
FYS or USP Elective-Any 3-credit hour of FYS or 3-credit hours of USP electives	3		X

Note: FYS courses have been paused. 3 hours from any additional USP designated courses is still required.

Professional Education Requirements

Graduates of this program earn a Bachelor's Degree in Earth Science Education and a concurrent major in Environmental Systems Science. It prepares students to teach Earth Science in grades 6-12.

A minimum of 120 credit hours is required for this degree program. All major courses must be passed with a grade of C or better. A minimum UW cumulative GPA of 2.75 is required for most junior and senior level professional education courses, including EDSE 4500 Residency in Teaching. A minimum GPA of 2.50 in major content courses is required. The College of Education requires a UW cumulative GPA of 2.75 for graduation. A minimum of 42 credits must be upper-division.

An initial background check must be completed prior to starting any field or practicum experience. Student fees cover the cost of this initial background check so work with your College of Education advisor for details.

All Professional Education requirements must be completed with a grade of C or higher.

Foundations

Course Name	Credits	Casper	CWC	EWC	LCCC	NWCCD	Northwest	Western
EDST 2450 - Foundations of Development and Learning H	3	Note 1	Note 1	Note 1	X	Note 1	X	X
ITEC 2360 - Teaching and Learning with Educational Technology	3	X	X	X	X	X	X	X

Course Name	Credits	Casper	CWC	EWC	LCCC	NWCCD	Northwest	Western
EDEX 2484 - Introduction to Special Education	3	X	X	X	X	X	X	X

A minimum 2.75 UW cumulative GPA is required for registration in EDST 3100 and EDST 3101. A current background check, approved by the College of Education, no older than one year, must be on file with the College of Education Student Success Center.

Course Name	Credits	
EDST 3100 - Teacher as Practitioner C2	3	UW Course
EDST 3200 - Foundations of ESL Learning	3	UW Course
EDST 3480 - Schools and Society H	3	UW Course

Practicum

Course Name	Credits	Casper	CWC	EWC	LCCC	NWCCD	Northwest	Western
EDST 1200 - Practicum I	1	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2
EDST 2200 - Practicum 2	1	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2

Course Name	Credits	
EDST 3101 - Practicum 3 C2	2	UW Course

Assessment

Course Name	Credits	Casper	CWC	EWC	LCCC	NWCCD	Northwest	Western
EDST 2250 - Educational Assessment	3	X	X		X			X

Methods

Course Name	Credits	
EDSE 3275 - Subject Matter Specific Methods I: Secondary Science Education (3 credits required)	3-6	UW Course
EDSE 4275 - Subject Matter Specific Methods II: Secondary Science Education (4 credits required) C3	3-6	UW Course

Residency

Course Name	Credits	
EDSE 4500 - Residency in Teaching (12 credits required)	1-16	UW Course
EDSE 4550 - Residency Applications and Synthesis	3	UW Course

Environmental Systems Science Foundations

Course Name	Credits	Casper	CWC	EWC	LCCC	NWCCD	Northwest	Western
PLNT 1000 - Agroecology PN OR ENR 1200 - Environment PN OR LIFE 1010 - General Biology PN	4	Note 3	Note 3	Note 3	Note 3	Note 3	Note 3	Note 3
ENR/GEOL 1330 - Water, Dirt, and Earth's Environment PN OR GEOG 1010 - Introduction to Physical Geography PN OR GEOL 1100 - Physical Geology PN	3-4	X	X	X	X	X	X	X
CHEM 1020 - General Chemistry I PN OR CHEM 1000 - Introductory Chemistry PN	4	X	X	X	X	X	X	X

Course Name	Credits	
ESS 1000 - Wyoming in the Earth System PN	3	UW Course
ESS 4950 - Environmental Systems Synthesis C3	3	UW Course
ESS 4970 - Internship in Earth System Science (met through successful completion of Residency in Teaching: EDSE 4500)	1-6	UW Course

Spheres

Other options might be available in some categories

1. Anthrosphere - Choose 1 Course

Course Name	Credits	
AMST 4030 - Ecology of Knowledge	3	UW Course
ENR 4030 - Ecology of Knowledge	3	UW Course
ANTH 4310 - Environmental Anthropology	3	UW Course
ENR/GEOG 4040 - Conservation of Natural Resources	3	UW Course
ENR/HIST 4412 - Global Environment History H	3	UW Course
ENR/SOC 3950 - Environmental Sociology	3	UW Course
GEOG/NAIS 3400 - Traditional Ecological Knowledge	3	UW Course
GEOL 3650 - Energy for Society: Addressing the Energy Grand Challenge PN	4	UW Course
ENR 4570 - Climate Change Responses	3	UW Course

2. Atmosphere - Choose 1 Course

Course Name	Credits	
ATSC 2100 - Global Warming: The Science of Humankind's Energy Consumption Impacting Climate PN	3	UW Course
ATSC 2200 - Severe and Unusual Weather PN	3	UW Course
ERS 3010 - Air Quality Management	3	UW Course
ENR/GEOG/GEOL 3450 - Weather and Climate	3	UW Course
ATSC 2000 - Introduction to Meteorology PN	4	UW Course
GEOL 3500 - Global Change: A Geological Perspective	4	UW Course
GEOG/GEOL 4441 - Advanced Climate Variability	3	UW Course

3. Biosphere - Choose 1 Course

Course Name	Credits	Casper	CWC	EWC	LCCC	NWCCD	Northwest	Western
ENR/ZOO 2450 - Fish and Wildlife Management in the Anthropocene C2	4	X		X	X	X	X	
LIFE 2022 - Animal Biology	4	Note 4	Note 4		Note 4	Note 4		Note 4
LIFE 2023 - Biology of Plants and Fungi	4	Note 5			Note 5	Note 5	Note 5	Note 5
LIFE 3400 - General Ecology	3	Note 6		Note 6		Note 6	Note 6	Note 6
REWM 2000 - Principles of Rangeland Management	3	X	X	X	X	X	X	X
RNEW 2100 - Forest Management	3						Note 7	Note 7

Course Name	Credits	
GEOG 4460 - Biogeography	3	UW Course
GEOG/GEOL 4470 - Fire Ecology	3	UW Course
REWM 4200 - Reclamation of Drastically Disturbed Lands	3	UW Course
REWM 4440 - Applied Fire Ecology	3	UW Course

4. Environmental Systems Interactions - Choose 1 Course

Course Name	Credits	
CE/ENR 4430 - Green Chemistry and Global Environmental Problems	3	UW Course
ENR/SOIL 3130 - Environmental Quality	3	UW Course
ENR 4570 - Climate Change Responses	3	UW Course
ESS/GEOG 3480 - Environmental Change	3	UW Course
EOL 3500 - Global Change: A Geological Perspective	4	UW Course
GEOL 3600 - Earth and Mineral Resources PN	4	UW Course

5. Lithosphere Hydrology & Surface Processes - Choose 1 Course

Course Name	Credits	Casper	CWC	EWC	LCCC	NWCCD	Northwest	Western
GEOL 2150 - Geomorphology	4	X					X	

Course Name	Credits	
GEOG 3010 - Geomorphology of Earth's Dynamic Landscapes	3	UW Course
ENR/REWM 4285 - Wildland Hydrology	3	UW Course
ENR/REWM 3100 - Principles of Wildland Water Quality	3	UW Course
REWM 4700 - Wildland Watershed Management	3	UW Course
REWM 4710 - Watershed Water Quality Management	3	UW Course

Skills & Tools**Data Analysis****Choose 1 Course**

Course Name	Credits	
ENR/GEOL 4525 - Environmental Data Analysis	4	UW Course
ESS 4001 - Analysis of Nature's Data	3	UW Course
STAT 3050 - Statistical Methods	3	UW Course

Statistics or Calculus Choose 1 course:

Course Name	Credits	Casper	CWC	EWC	LCCC	NWCCD	Northwest	Western
STAT 2050 - Fundamentals of Statistics Q	4	X	X	X	X	X	X	X
STAT 2070 - Introductory Statistics for the Social Sciences Q	4	X		X		X	X	X
MATH 2200 - Calculus I Q	4	X	X	X	X	X	X	X

GIS/Remote Sensing Choose one group:**GIS: Take all course of**

Course Name	Credits	Casper	CWC	EWC	LCCC	NWCCD	Northwest	Western
GIST 2200 - Spatial Data Visualization	3			X				
GIST 2190 - Introduction to Programming in Geospatial Information Science and Technology	3		X					

OR**Remote Sensing: Choose 6 Credits:**

Course Name	Credits	Casper	CWC	EWC	LCCC	NWCCD	Northwest	Western
GIST 2140 - Survey of Remote Sensing Applications PN	3		X					

Course Name	Credits	
GIST 4130 - Applied Remote Sensing	3	UW Course
GIST 4211 - Advanced Remote Sensing	3	UW Course
GIST 4410 - UAS Sensors and Platforms	1	UW Course
GIST 4420 - UAS Mission Planning	1	UW Course
GIST 4430 - UAS Regulations and Safety	1	UW Course
GIST 4440 - UAS Ground School and Operations	2	UW Course
GIST 4450 - UAS Data Acquisition and Processing	3	UW Course

Additional Science

Course Name	Credits	Casper	CWC	EWC	LCCC	NWCCD	Northwest	Western
PHYS 1110 - General Physics I PN	4	X	X	X	X	X	X	X

Electives

A variable amount of elective courses is required to meet the minimum requirement. Work with your academic advisor to select appropriate elective courses. This concurrent major program meets the 18+ credit hours that ESS requires for a minor.

Notes

Note 1: Students at CWC & EWC must take both EDFD 2100 and EDFD 2450 to receive credit for EDST 2450. Students at Casper and Sheridan may take PSYC 2300 + EDFD 2450 to receive credit for EDST 2450.

Note 2: At all WYCCs, EDUC 2100 is equivalent to *both* EDST 1200 + EDST 2200 at UW.

Note 3:

- AECL 1000 is equivalent to UW PLNT 1000.
- BIOL 1080 is equivalent to UW ENR 1200.
- All WYCCs offer BIOL 1010 which is equivalent to LIFE 1010.

Note 4: BIOL 2022 is equivalent to UW LIFE 2022.

Note 5: BIOL 2023 is equivalent to UW LIFE 2023.

Note 6: BIOL 2400 is approved to satisfy LIFE 3400 for this program; students should connect with their UW advisor upon enrolling.

Note 7: REWM 2100 is equivalent to UW RNEW 2100.

COURSE SUBSTITUTIONS: WyoTAGs reflect published equivalencies. UW academic departments occasionally arrange for course substitutions when indirect equivalencies exist. Please contact your UW Academic Advisor for details.

EFFECTIVE DATE: This document is in effect as of the 2026-2027 catalog year; it reflects the published UW curriculum as of that date. Any changes to the UW curriculum or the WYCC course equivalents will require this document to be updated. To request an updated document, faculty should contact transfer@uwyo.edu via email.