

Bachelor of Science in Earth System Science

Degree Map & Planning Information

Admissions Information

This program is a declarable major. If you meet the minimum requirements listed below, you may submit a major declaration form through the UWB website.

Students must complete the following prerequisites, with a minimum 2.0 grade. The grades must be recorded on your unofficial or official transcript(s).

- B WRIT 134 Composition or equivalent
- One Introductory Earth System Science Course (5 credits) from the following:
 - BEARTH 153 Introduction to Geology
 - BEARTH 154 Introduction to Oceanography
 - BEARTH 155 Introduction to Climate Science
 - BEARTH 201 Mapping the Earth System
 - BEARTH 202 Modeling Global Systems
 - BIS 242 Environmental Geography
 - BIS 243 Introduction to Environmental Issues
 - B PHYS 101 Introduction to Astronomy
 - Or equivalent transfer course (ENVIR 100, ESRM 100, ESS 101, ESS 201, or OCEAN 101)
- One Introductory Math and Science course from the list below. Selected course must not overlap with courses used for degree requirements.

Curriculum Information

General Education

To be eligible for graduation from the University, with the baccalaureate degree, a student must complete a minimum of 180 academic credits and satisfy all other specific requirements. The University of Washington Bothell has established minimum general education requirements for baccalaureate degrees. These minimum requirements are:

- English Composition – 5 credits (a minimum grade of 2.0 is required)
- Additional Writing – 10 credits
- Reasoning (RSN) – 5 credits
- Natural Sciences (NSc) – 15 credits
- Arts and Humanities (A&H) – 15 credits

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- Social Sciences (SSc) – 15 credits
- Diversity – 5 credits (can overlap with General Education requirements above)

Major Requirements

For the Earth System Science major, students must complete the following courses:

A. Earth Systems Science Base

- B GIS 342 Geographic Information Systems (5 Credits)
- BES 301 Science Methods & Practices OR BST 301 Scientific Writing (5 credits)
- Introductory Environmental Courses (15 credits; choose from list) NOTE: Selected courses should not overlap with a prerequisite. Transfer courses must be approved by an Academic Advisor.
 - BEARTH 153 Introduction to Geology
 - BEARTH 154 Introduction to Oceanography
 - BEARTH 155 Introduction to Climate Science
 - BEARTH 201 Mapping the Earth System
 - BEARTH 202 Modeling Global Systems
 - BIS 141 Natural History and Environmental Science
 - BIS 242 Environmental Geography
 - BIS 243 Introduction to Environmental Issues
 - BIS 245 Environment and Humanities
 - BIS 246 Introduction to Sustainability
 - BIS 307 Environmental Justice
 - BIS 345 American Environmental Thought
 - BIS 356 Ethics and the Environment
 - BIS 359 Principles and Controversies of Sustainability
 - B PHYS 101 Introduction to Astronomy

B. Introductory Math and Science Requirements (30-33 Credits)

NOTE: Selected courses must not overlap with a prerequisite. Transfer courses must be approved by an academic advisor and might require a petition.

- Introductory Chemistry (5-6 credits)
 - B CHEM 143 + 144 General Chemistry I and Lab
- Introductory Physics (5 credits)
 - B PHYS 114 + 117 General Physics and Lab, OR
 - B PHYS 121 Mechanics
- Introductory Statistics (5 credits; choose from list)
 - BIS 215

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- B MATH 215
- STMATH 341
- Introductory Calculus (5 credits; choose from list)
 - B MATH 144 Calculus for Life & Social Science
 - STMATH 124 Calculus I
- Additional Foundation Science Course (15-17 credits; choose from list)
 - B BIO 180 Introductory Biology
 - B CHEM 153 + 154 General Chemistry II and Lab II
 - B CHEM 163 + 164 General Chemistry III and Lab III
 - B PHYS 115 + 118 General Physics and Lab
 - B PHYS 116 + B PHYS 119 General Physics and Lab
 - B PHYS 122 Electromagnetism & Oscillatory Motion
 - B PHYS 123 Waves
 - CSS 112 Introduction to Programming for Scientific Applications
 - CSS 142 Computer Programming I
 - STMATH 125 Calculus II
 - STMATH 126 Calculus III

C. Earth Systems Ascent (40 Credits)

- Earth System Science Focus Courses (4 courses; 20 credits). At least 1 course taken must be a field course; look for the courses with the (F) designation. Please see your academic advisor for additional courses that might apply toward the Fieldwork requirement. See list maintained by the department for course options.
- Computer Methods and Quantitative Analysis, choose from list (2 courses; 9-10 credits) See list maintained by the department for course options.
- Human Dimensions of the Earth System, choose from list (2 courses; 10 credits) See list maintained by the department for course options.
- ESS Capstone 5 credits from the below options (Subject to approval based on project topics)
 - BES 492 & BES 493 Capstone Research in Environmental Science I & II
 - BES 498 Independent Research in Environmental Science
 - BES 491 Research in Environmental Science
 - Students may substitute Capstone with the below options with ESS Faculty Approval. Talk to your advisor for assistance.
 - B CHEM 495 & 496 Investigative Chemistry I & II
 - B BIO, B CHEM, B PHYS, or BST 499 Undergraduate Research
 - B BIO 495 Investigative Biology
 - BIS 495 Internship

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Sample 4-year Course Plan - ESS

Year 1

Autumn	Winter	Spring	Summer
B WRIT 134 (5)	B WRIT 135 (5)	A&H or SSc (5)	
B CORE (5-A&H or SSc)	ESS prep course (5) – see recommended list online	Intro Earth Systems Science course (5)	
A&H or SSc (5)	A&H or SSc (5) or Pre-Calculus if needed	Calculus	

Year 2

Autumn	Winter	Spring	Summer
Earth Systems Science Base course (5)	BIS 215 (RSN) (5)	A&H or SSc (5)	
Intro Chem I + Lab or Phys I + Lab	Intro Math and Science course (5)	Intro Math and Science course (5)	
Additional Foundational Science (5)	A&H or SSc that's also Diversity Course (5)	Additional Foundational Science (5)	

Year 3

Autumn	Winter	Spring	Summer
B GIS 342 (5)	BES 301 or BST 301 (5)	Earth Systems Ascent – Science focus (5)	
Additional Foundational Science (5)	Earth Systems Science Base course (5)	Earth Systems Science Base course (5)	
Intro Math and Science course (5)	Elective (5)	Intro Math and Science course (5)	

Year 4

Autumn	Winter	Spring	Summer
Intro Math and Science course (5)	Earth Systems Ascent – Science focus (5)	Earth Systems Ascent – Science focus (5)	
Human Dimensions of Earth System (5)	Earth Systems Ascent – Science focus (5)	Human Dimensions of Earth System (5)	
BES 492 (3) Capstone I	BES 493 (7) Capstone II	Elective	

This is a sample schedule of courses based on degree requirements. The actual degree plan may differ depending on the course of study selected, the number of starting credits, or the starting admission point. This guide is not a substitute for academic advising. For more information, contact your academic advisor or visit www.uwb.edu/advising.

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