# EARTH, WATER, AND CLIMATE SCIENCE B.S.

The B.S. in Earth, Water, and Climate Science is designed for students who seek post-graduate employment as a professional geoscientist or preparation for graduate study in Geosciences.

## General Degree Requirements

To earn a baccalaureate degree, all students must complete successfully, in addition to any other requirements, the University of Montana General Education Requirements. Please refer to the General Education Requirements page (https://catalog.umt.edu/academics/general-education-requirements/) for more information.

Additional requirements for graduation can be found on the Degree/Certificate Requirements for Graduation page (https://catalog.umt.edu/academics/graduation-requirements/).

Unless otherwise noted in individual program requirements, a minimum grade point average of 2.00 in all work attempted at the University of Montana-Missoula is required for graduation. Please see the Academic Policies and Procedures page (https://catalog.umt.edu/academics/policies-procedures/) for information on how your GPA is calculated.

Courses taken to satisfy the requirements of a major, minor, or certificate program must be completed with a grade of C- or better unless a higher grade is noted in the program requirements.

## Bachelor of Science - Earth, Water, and Climate Science

### Course Requirements

| Code | Title | Hours |
|---|---|---|
| **Lower-Division Core** | | |
| Complete one of the following courses: | | 4 |
| ERTH 101N & ERTH 103N | Earth Systems Science and Earth Systems Science Lab | |
| GEO 107N | Natural Disasters | |
| Complete all of the following courses: | | |
| ERTH 194 | Getting to Know Earth, Water, and Climate Science | 1 |
| GEO 201 | The Rocky Planet | 4 |
| GEO 202 | The Water Planet | 4 |
| **Upper-Division Core** | | |
| Complete all of the following courses: | | |
| GEO 323 | Computational Methods for Earth and Environmental Scientists | 3 |
| GEO 428 | Field Methods: Earth, Water, and Climate Science | 3 |
| **Upper-Division Electives** | | |
| Earth Science | | |
| Complete two of the following courses: | | 6-8 |
| GEO 302 | Mineralogy and Optical Mineralogy | |
| GEO 305 | Igneous & Metamorph Petrology | |
| GEO 309 | Sedimentation/Stratigraphy | |
| GEO 321 | Earth Resources and Sustainability | |
| GEO 439 | Geophysics | |
| GEO 443 | Principles of Sedimentary Petrology | |
| Water Science | | |
| Complete two of the following courses. At least one must be a Geosciences (GEO) course. | | 6-8 |
| ERTH 406 | Global Water Crises | |
| GEO 420 | Hydrogeology | |
| GEO 421 | Hydrology | |
| GEO 460 | Process Geomorphology | |
| NRSM 385 | Watershed Hydrology | |
| Climate Science | | |
| Complete 3 credits of the following courses: | | 3 |
| ERTH 303N | Weather and Climate | |
| GEO 318 | Earth's Changing Climate | |
| GEO 322 | Energy and the Environment | |
| GEO 488 | Snow, Ice and Climate Change | |
| NRSM 408 | Natural Climate Solutions | |
| **Upper-Division Experiential Learning** | | |
| Complete 3 credits of the following courses: | | 3 |
| GEO 316 | Getting Started in Research | |
| GEO 392 | Independent Study | |
| GEO 409 | Careers in Geosciences | |
| GEO 498 | Internship | |
| GEO 499 | Senior Thesis/Capstone | |
| **Cognate Sciences** | | |
| Physics | | |
| Complete one of the following sequences: | | 10 |
| Algebra- and Trigonometry-based Physics: | | |
| PHSX 205N & PHSX 206N | College Physics I and College Physics I Laboratory | |
| PHSX 207N & PHSX 208N | College Physics II and College Physics II Laboratory | |
| Calculus-based Physics: | | |
| PHSX 215N & PHSX 216N | Fundamentals of Physics with Calculus I and Physics Laboratory I with Calculus | |
| PHSX 217N & PHSX 218N | Fundamentals of Physics with Calculus II and Physics Laboratory II with Calculus | |
| Chemistry | | |
| Complete one of the following: | | 3-5 |
| CHMY 121N | Introduction to General Chemistry | |
| CHMY 141N & CHMY 142N | College Chemistry I and College Chemistry I Lab | |
| Mathematics and Statistics | | |
| Complete all of the following courses: | | |
| M 171 | Calculus I | 4 |
| M 172 | Calculus II | 4 |
| or STAT 216 | Introduction to Statistics | |
| Computer Science | | |
| Complete the following course: | | |
| CSCI 150 | Introduction to Computer Science | 3 |
| **Total Hours** | | **61-67** |

# Four Year Plan

| Course | Title | Hours |
|---|---|---|
| **Freshman** | | |
| **Autumn** | | |
| ERTH 101N | Earth Systems Science | 3 |
| ERTH 103N | Earth Systems Science Lab | 1 |
| ERTH 194 | Getting to Know Earth, Water, and Climate Science | 1 |
| M 171 | Calculus I (or appropriate prereq) | 4 |
| CSCI 150 | Introduction to Computer Science | 3 |
| General Education Requirement / Elective | | 3 |
| | **Hours** | **15** |
| **Spring** | | |
| CHMY 121N<br>or CHMY 141N ***and*** CHMY 142N | Introduction to General Chemistry<br>or College Chemistry I ***and*** College Chemistry I Lab | 4 |
| M 172<br>or STAT 216 | Calculus II<br>or Introduction to Statistics | 4 |
| General Education Requirement / Elective | | 8 |
| | **Hours** | **16** |
| **Sophomore** | | |
| **Autumn** | | |
| GEO 201 | The Rocky Planet | 4 |
| PHSX 205N<br>or PHSX 215N | College Physics I<br>or Fundamentals of Physics with Calculus I | 4 |
| PHSX 206N<br>or PHSX 216N | College Physics I Laboratory (take with corresponding course)<br>or Physics Laboratory I with Calculus | 1 |
| General Education Requirement / Elective | | 6 |
| | **Hours** | **15** |
| **Spring** | | |
| GEO 202 | The Water Planet | 4 |
| PHSX 207N<br>or PHSX 217N | College Physics II<br>or Fundamentals of Physics with Calculus II | 4 |
| PHSX 208N<br>or PHSX 218N | College Physics II Laboratory<br>or Physics Laboratory II with Calculus | 1 |
| General Education Requirement / Elective | | 6 |
| | **Hours** | **15** |
| **Junior** | | |
| **Autumn** | | |
| GEO 323 | Computational Methods for Earth and Environmental Scientists | 3 |
| Upper Division Elective | | 6 |
| General Education Requirement / Elective | | 6 |
| | **Hours** | **15** |
| **Spring** | | |
| Upper Division Elective | | 6 |
| General Education Requirement / Elective | | 9 |
| | **Hours** | **15** |
| **Senior** | | |
| **Autumn** | | |
| GEO 428 | Field Methods: Earth, Water, and Climate Science | 3 |
| Upper Division Elective | | 3 |
| Upper Division Experiential Learning | | 3 |
| General Education Requirement / Elective | | 6 |
| | **Hours** | **15** |
| **Spring** | | |
| Upper Division Elective | | 3 |
| General Education Requirement / Elective | | 12 |
| | **Hours** | **15** |
| | **Total Hours** | **121** |

*Last updated Autumn 2024*