

# ENVIRONMENTAL SCIENCE AND SUSTAINABILITY B.S. - CLIMATE SCIENCE AND ENVIRONMENTAL CHANGE

The Climate Science and Environmental Change concentration provides students with an understanding of climate science, interactions between climate and ecosystems, and the intersections of climate, society, and policy.

## Bachelor of Science - Environmental Science and Sustainability; Climate Science and Environmental Change Concentration

### General Education Requirements

Information regarding these requirements can be found in the General Education Section (<http://catalog.umt.edu/academics/general-education-requirements/>) of the catalog.

### Summary

Code	Title	Hours
Lower-Division Required Courses		18-19
<b>Climate Science and Environmental Change Concentration Requirements</b>		
Biology		3-4
Climate Science		12
Climate and Society A		6
Climate and Society B		3
Environmental Change		9
Mathematics		3-4
Physics		5
Policy		3
Experiential Learning Requirement		
Advanced Writing Requirement		
<b>Total Hours</b>		<b>62-65</b>

**Degree Specific Credits:** 62-65

**Required Cumulative GPA:** 2.0

### Lower-Division Required Courses

**Note:** NRSM 110 will not be required if students declare the major with 60+ credits.

Code	Title	Hours
<b>Complete the following courses:</b>		
NRSM 110	First Year Seminar in Environmental Science and Sustainability	1
NRSM 121S	Environmental Science and Sustainability	3

GPHY 111N	Intro to Physical Geography: Climate, Landforms, and Vegetation	3
GPHY 112N	Intro to Physical Geography Laboratory: Climate, Landforms, and Vegetation	1
<b>Oral Communication - Complete one of the following courses:</b>		
COMX 111A	Introduction to Public Speaking	3
or THTR 120A	Introduction to Acting I	
<b>Statistics Requirement - Complete one of the following courses:</b>		<b>3-4</b>
FORS 201	Forest Biometrics	
STAT 216	Introduction to Statistics	
WILD 240	Intro to Biostatistics	
<b>Chemistry - Complete the following course:</b>		
CHMY 121N	Introduction to General Chemistry	4
<b>Total Hours</b>		<b>18-19</b>

Minimum Required Grade: C-

### Climate Science and Environmental Change Concentration Requirements

**Rule:** Complete all of the following subcategories. 47-48 total credits required.

#### Biology

Code	Title	Hours
<b>Complete one of the following:</b>		<b>3-4</b>
BIOB 160N	Principles of Living Systems	
BIOB 170N	Principles of Biological Diversity	
BIOE 172N	Introductory Ecology	
BIOO 105N	Introduction to Botany	
<b>Total Hours</b>		<b>3-4</b>

Minimum Required Grade: C-

#### Climate Science

Code	Title	Hours
<b>Complete all of the following courses:</b>		
CCS 103X	Introduction to Climate Change: Science & Society	3
ERTH 303N	Weather and Climate	3
or NRSM 281	Science of Climate Change	
or GEO 318	Earth's Changing Climate	
NRSM 408	Global Cycles and Climate	3
NRSM 418	Ecosystem Climatology	3
<b>Total Hours</b>		<b>12</b>

Minimum Required Grade: C-

#### Climate and Society A

Code	Title	Hours
<b>Complete all of the following courses:</b>		
NRSM 326	Climate and Society	3

NRSM 349E	Climate Change Ethics and Policy	3
<b>Total Hours</b>		<b>6</b>

Minimum Required Grade: C-

### Climate and Society B

Code	Title	Hours
<b>Complete one of the following courses:</b>		<b>3</b>
COMX 349	Communication, Consumption, and Climate	
ECNS 445	Introduction to Environmental Economics & Climate Change	
ENST 427	Social Issues: The Mekong Delta	
PHL 112E	Intro Ethics and Environment	
<b>Total Hours</b>		<b>3</b>

Minimum Required Grade: C-

### Climate Solutions

Code	Title	Hours
<b>Complete one of the following courses:</b>		<b>3</b>
BGEN 160S	Issues in Sustainability	
BGEN 445	Sustainability Reporting	
BMGT 410	Sustainable Business Practices	
ENST 350	Energy and Climate	
ENST 437	Climate Change: Mekong Delta	
GPHY 421	Sustainable Cities	
NRSM 321	Field Studies and Energy Systems in Montana	
<b>Total Hours</b>		<b>3</b>

Minimum Required Grade: C-

### Environmental Change

Code	Title	Hours
<b>Complete all of the following courses:</b>		
FORS 230	Fire Management & Environmental Change	3
FORS 333	Fire Ecology	3
or FORS 330	Forest Ecology	
or BIOE 447	Ecosystem Ecology	
NRSM 385	Watershed Hydrology	3
<b>Total Hours</b>		<b>9</b>

Minimum Required Grade: C-

### Mathematics

Code	Title	Hours
<b>Complete one of the following:</b>		<b>3-4</b>
M 122	College Trigonometry	
M 151	Precalculus	
M 162	Applied Calculus	
<b>Total Hours</b>		<b>3-4</b>

Minimum Required Grade: C-

### Physics

Code	Title	Hours
<b>Complete all of the following courses:</b>		
PHSX 205N	College Physics I	4
PHSX 206N	College Physics I Laboratory	1
<b>Total Hours</b>		<b>5</b>

Minimum Required Grade: C-

### Policy

Code	Title	Hours
<b>Complete one of the following courses:</b>		<b>3</b>
NRSM 422	Natural Resource Policy and Administration	
NRSM 428	Climate Policy	
<b>Total Hours</b>		<b>3</b>

Minimum Required Grade: C-

### Experiential Learning Requirement

Code	Title	Hours
<b>Complete one of the following courses:</b>		<b>3</b>
BIOE 342	Field Ecology	
BIOE 400	Aquatic Microbial Ecology	
BIOE 416	Alpine Ecology	
BIOE 439	Stream Ecology	
BIOE 440	Conservation Ecology	
BIOE 451	Landscape Ecology	
BIOE 453	Lake Ecology	
BIOE 458	Forest and Fire Ecology	
ENST 427	Social Issues: The Mekong Delta	
ENST 437	Climate Change: Mekong Delta	
FORS 130	Introduction to Forestry Field Skills	
FORS 440	Forest Stand Management	
GPHY 385	Field Techniques	
NRSM 115	First Year Seminar in Field Studies in Conservation	
NRSM 273	Wilderness and Civilization Field Studies	
NRSM 298	Internship	
NRSM 345	Watershed Dynamics and Management Issues	
NRSM 398	Internship	
NRSM 495	Ecosystem Science and Restoration Practicum	
NRSM 498	Internship	
NRSM 499	Senior Thesis	
PTRM 150	First Year Seminar in Parks, Tourism, and Recreation Management	
PTRM 345X	Sustaining Human Society & Natural Environment	
PTRM 418	Winter Wilderness Field Studies	

PTRM 484	Capstone in Parks, Tourism, and Recreation Management	
WILD 374	Hunter Check Station	
<b>Total Hours</b>		<b>3</b>

Minimum Required Grade: C-

## Advanced Writing Requirement

Code	Title	Hours
<b>Complete three of the following courses:</b>		<b>9</b>
BIOE 428	Freshwater Ecology	
BIOE 447	Ecosystem Ecology	
FORS 330	Forest Ecology	
FORS 341	Timber Harvesting & Roads	
FORS 347	Multiple Resource Silviculture	
FORS 349	Practice of Silviculture	
FORS 440	Forest Stand Management	
FORS 499	Senior Thesis	
NASX 403		
NRSM 326	Climate and Society	
NRSM 349E	Climate Change Ethics and Policy	
NRSM 379	Collaborations in Natural Resource Decisions	
NRSM 389E	Ethics and Sustainability	
NRSM 462	Rangeland Ecology	
NRSM 465	Foundations of Restoration Ecology	
NRSM 475	Environment & Development	
NRSM 495	Ecosystem Science and Restoration Practicum	
NRSM 499	Senior Thesis	
PTRM 300	Recreation Behavior	
WILD 410	Wildlife Policy & Biopolitics	
<b>Total Hours</b>		<b>9</b>

Minimum Required Grade: C-