# Climate Science Option

This option is offered within the following major(s):

- Earth Sciences - College of Earth, Ocean, and Atmospheric Sciences (http://catalog.oregonstate.edu/college-departments/earth-ocean-atmospheric-sciences/earth-sciences-bs-hbs)

Students completing the Climate Science option will be prepared for a variety of careers in different areas related to climate, including:

1. research and technical fields,
2. outreach, education, and communication, and
3. policy and economics.

All students will gain skills in the areas of basic science, data collection and analysis, in addition to a rigorous curriculum in climate science. A broad set of electives will allow students to pursue additional course work to prepare them in their specific areas of interest. Some students may choose to pursue advanced degrees in related disciplines, whereas others will enter the job market directly.

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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>PH 221</td>
<td>RECITATION FOR PHYSICS 211</td>
<td>1</td>
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### Chemistry

Select one of the following:

- CH 122  *GENERAL CHEMISTRY
- CH 232  GENERAL CHEMISTRY & CH 262 *LABORATORY FOR CHEMISTRY 232

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<tr>
<td>PH 202</td>
<td>*GENERAL PHYSICS</td>
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<td>PH 203</td>
<td>*GENERAL PHYSICS</td>
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### Physics

Select one of the following options:

**Option A**
- PH 202  *GENERAL PHYSICS
- PH 203  *GENERAL PHYSICS

**Option B**
- PH 212  *GENERAL PHYSICS WITH CALCULUS and RECITATION FOR PHYSICS 212
- PH 213  *GENERAL PHYSICS WITH CALCULUS & PH 222 and RECITATION FOR PHYSICS 213

### Calculus

- MTH 252  INTEGRAL CALCULUS 4
- MTH 254  VECTOR CALCULUS I 4

### Core Requirements

- ATS 295  OBSERVING CLIMATE 3
- ATS 301  CLIMATE DATA ANALYSIS 4
- ATS 310  METEOROLOGY 4
- ATS 420  PRINCIPLES OF CLIMATE: PHYSICS OF CLIMATE AND CLIMATE CHANGE 4
- ATS 421  CLIMATE MODELING 4
- GEO 484  INTRODUCTION TO BIOGEOCHEMISTRY 3
- GEO 486  QUATERNARY PALEOClimatology 3
- GEOG 323  *CLIMATOLOGY 4

### Experiential Learning

Select 6 credits of the following:

- ATS 401  RESEARCH

### Electives

Select at least one course in Climate Impacts, Adaptation, or Mitigation:

- CH 374  *TECHNOLOGY, ENERGY, AND RISK
- ENGR 363  *ENERGY MATTERS
- FW 325  *GLOBAL CRISIS IN RESOURCE ECOLOGY
- GEOG 240  *CLIMATE CHANGE, WATER AND SOCIETY
- GEOG 441  INTERNATIONAL WATER RESOURCES MANAGEMENT
- GEOG 440  WATER RESOURCES MANAGEMENT IN THE UNITED STATES
- OC 333  OCEANS, COASTS, AND PEOPLE
- PH 313  *ENERGY ALTERNATIVES
- WSE 473  BIOENERGY AND ENVIRONMENTAL IMPACT

Select at least one course in Policy or Economics:

- AEC 352  *ENVIRONMENTAL ECONOMICS AND POLICY
- or ECON 352  *ENVIRONMENTAL ECONOMICS AND POLICY
- PS 455  *THE POLITICS OF CLIMATE CHANGE
- PS 473  US ENERGY POLICY
- PS 478  RENEWABLE ENERGY POLICY

Select an additional 15 credits of electives listed above or below:

- ATS 411  THERMODYNAMICS AND CLOUD MICROPHYSICS
- ATS 412  ATMOSPHERIC RADIATION
- ATS 413  ATMOSPHERIC CHEMISTRY
- ATS 475  PLANETARY ATMOSPHERES
- GEO 433  COASTAL GEOMORPHOLOGY
- GEO 481  GLACIAL GEOLOGY
- GEO 488  QUATERNARY STRATIGRAPHY OF NORTH AMERICA
- GEOG 423  SNOW HYDROLOGY
- OC 334  *POLAR OCEANOGRAPHY
- OC 430  PRINCIPLES OF PHYSICAL OCEANOGRAPHY
- OC 440  BIOLOGICAL OCEANOGRAPHY
- OC 450  CHEMICAL OCEANOGRAPHY
- OC 460  GEOLOGICAL OCEANOGRAPHY

No more than two of the following may be used toward the 15 additional elective credits:

- GEOG 480  REMOTE SENSING I: PRINCIPLES AND APPLICATIONS
- GEOG 481  REMOTE SENSING II: DIGITAL IMAGE PROCESSING
- MTH 256  APPLIED DIFFERENTIAL EQUATIONS
- MTH 341  LINEAR ALGEBRA I
- ST 352  INTRODUCTION TO STATISTICAL METHODS
- WR 362  *SCIENCE WRITING

**Total Hours:** 80-81

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1 Students taking PH 211  *GENERAL PHYSICS WITH CALCULUS in this option are required to take PH 221  RECITATION FOR PHYSICS 211 concurrently
Climate Science Option

* Baccalaureate Core Course
^ Writing Intensive Course (WIC)

Option Code: 836