**UNIVERSITY GRADUATION REQUIREMENTS:** OSU’s minimum credit hour requirements are met by combining Baccalaureate Core and Major courses plus other electives of your choice. Additional electives may be needed to reach the university degree requirements.

- 180 credits – Minimum number of credits required for a BS degree
- 60 credits – Minimum number of upper division credits required
- 2.00 Cumulative OSU GPA and major GPA
- 45 of the last 75 credits (or 150 total credits) of coursework must be from OSU

**BACCALAUREATE CORE REQUIREMENTS:** Total of 48 credits plus WIC course. No single course may be used to satisfy more than one area of the Bacc Core. Courses fulfilled through the major are checked.

<table>
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<tr>
<th>Skills (15 credits)</th>
<th>Perspectives Courses (24 credits - No more than two courses taken from the same department.)</th>
<th>Difference, Power &amp; Discrimination (3 credits)</th>
<th>Synthesis (6 credits - These two courses must be from different subjects; and may be met with electives.)</th>
<th>Writing Intensive Course within Earth SciencesWIC (4 credits)</th>
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<tr>
<td>☐ Writing I (3)</td>
<td>☑ Biological Science w/lab (4)</td>
<td>☐ Difference, Power &amp; Discrimination (3)</td>
<td>☐ Contemporary Global IssuesG (3)</td>
<td>☑ Met by GEOG 323 (4)</td>
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<td>☐ Writing II (3)</td>
<td>☐ Physical Science w/lab (4) (Met by GEO 201)</td>
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<td>☐ Science, Technology &amp; SocietyG (3)</td>
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<td>☐ Speech (3)</td>
<td>☑ Biological or Physical Science w/lab (4) (Met by GEO 202)</td>
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<td>☐ Cultural Diversity (3)</td>
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<td>☐ Literature &amp; the Arts (3)</td>
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<td>☐ Social Processes &amp; InstitutionsSI (3)</td>
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<td>☐ Western Culture (3)</td>
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**EARTH SCIENCES MAJOR REQUIREMENTS – CLIMATE SCIENCE OPTION:** Students must earn at least a C minus in upper division (300 or higher) courses required for the major, and a 2.0 GPA in major coursework. Students cannot S/U major requirements.

**Basic Math and Science Requirements** (41 credits)

- ☐ MTH 251 Differential Calculus (4)
- ☐ MTH 252 Integral Calculus (4)
- ☐ MTH 254 Vector Calculus (4) or ATS 302 Mathematical Methods in Earth Sciences (4) [W]
- ☐ ST 351 Intro to Statistical Methods (4)
- ☐ CH 231 General Chemistry + CH 261 Lab (or CH 121 General Chemistry) (5)
- ☐ CH 232 General Chemistry + CH 262 Lab (or CH 122 General Chemistry) (5)
- ☐ PH 211 General Physics with Calculus + PH 221 (or PH 201 General Physics) (5)
- ☐ PH 212 General Physics with Calculus + PH 222 (or PH 202 General Physics) (5)
- ☐ PH 213 General Physics with Calculus + PH 223 (or PH 203 General Physics) (5)
### Earth Sciences Core Courses (19-20 credits)
- ATS 201 Climate Science (4) [FSp]
- GEO 201 Physical Geology (4) [FW]
- GEO 202 Earth Systems Science (4) [W]
- OC 201 Oceanography (4) [FW]

Choose one additional skills course:
- CBEE 102 Engineering Problem Solving and Computations (3)
- ENGR 112 Introduction to Engineering Computing (3)
- GEOG 360 GIScience I: Geog. Info Systems & Theory (4) [FSp]
- PH 265 Scientific Computing (3)
- ST 352 Introduction to Statistical Methods (4)

### Climate Science Core Courses (30 credits)
- ATS 295 Observing Climate (3) [Spring Break]
- ATS 301 Climate Data Analysis (4) [F]
- ATS 310 Meteorology (4) [F]
- ATS 420 Physics of Climate and Climate Change (4) [W]
- ATS 421 Climate Modeling (4) [Sp]
- GEOG 323 ClimatologyWIC (4) [F]
- GEO 484 Introduction to Biogeochimistry (3) [W]
- GEO 486 Quaternary Paleoclimatology (3) [W]

### Prerequisites
- ATS 201
- ATS 201 and ST 351
- MTH 251 and PH 201/211] + [PH 202/212 or CH 121/231]
- MTH 252 and (PH 212 or 202) + ATS 310
- ATS 420
- GEOG 102 or GEO 202 or GEO 221 or ATS 201 or OC 201
- MTH 111 or higher and [(CH 232 + CH 262) or CH 122]
- GEO 202, (CH 232 or 122), and (PH 211 or 201)

### Experiential Learning [6 credits combined from the following]
- ATS 401 Research
- ATS 403 Thesis
- ATS 410 Internship

### Climate Science Electives (21-22 credits)
Choose at least one course from list below:
- Climate Impacts, Adaptation, and Mitigation
  - CH 374 Technology, Energy, and Risk\(^{G}\) (3)
  - ENGR 363 Energy Matters\(^{G}\) (3)
  - FW 325 Global Crises in Resources Ecology\(^{G}\) (3)
  - GEOG 240 Climate Change, Water and Society\(^{SI}\) (3) [F]
  - GEOG 440 Water Resources Mgmt in the US (3) [W]
  - GEOG 441 Int'l Water Resources Management (3) [Sp]
  - OC 333 Oceans, Coasts, and People (3) [FSp]
  - PH 313 Energy Alternatives\(^{S}\) (3)
  - WSE 473 Bioenergy and Environmental Impact (3)

Choose at least one course from list below:
- Climate Policy and Economics
  - AEC/ECON 352 Environmental Economics and Policy\(^{G}\) (3)
  - PS 455 The Politics of Climate Change\(^{G}\) (4)
  - PS 473 US Energy Policy (4)
  - PS 477 International Environmental Politics and Policy (4)
  - PS 478 Renewable Energy Policy (4)

Choose an additional 15 credits of electives from courses listed below or above:
- ATS 302 Mathematical Methods in Earth Sciences (4) [W]*
- ATS 411 Thermo. & Cloud Microphysics (4) [W Alt O]
- ATS 412 Atmospheric Radiation (3) [Sp Alt O]
- ATS 415 Atmospheric Dynamics (4) [W Alt E]
- ATS 417 Weather Sys. Dynamics & Forecasting (4) [Sp Alt E]
- ATS 475 Planetary Atmospheres (3)
- GEO 433 Coastal Geomorphology (3) [W Alt O]
- GEO 481 Glacial Geology (4) [F Alt E]
- GEO 488 Quaternary Stratigraphy of N. Am. (3) [F Alt O]
- GEOG 423 Snow Hydrology (3)
- OC 334 Polar Oceanography\(^{WIC}\) (3) [Sp]
- OC 430 Principles of Physical Oceanography (4) [F]
- OC 440 Biological Oceanography (4) [Sp]
- OC 450 Chemical Oceanography (4) [W]
- OC 460 Geological Oceanography (4) [Sp]

*May be taken as an elective if not used in Basic Math and Science section in place of MTH 254.

Alt = alternating  
O = odd; E = even  
F = Fall; W = Winter; Sp = Spring  
G = Contemporary Global Issues  
SI = Social Processes & Institutions  
S = Science Technology and Society  
WIC = Writing Intensive