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
_____ 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.

Skills (15 credits)
☐ Writing I (3)
☐ Writing II (3)
☐ Speech (3)
☐ Math 105 or higher (3)
☐ HHS 231 Lifetime Fitness for Health (2)
☐ Fitness Lab [HHS 241-248 or any PAC course] (3)

Perspectives Courses (24 credits - no more than two courses taken from the same department)
☐ Biological Science w/lab (4)
☐ Physical Science w/lab (4) (Met by GEO 201)
☐ Biological or Physical Science w/lab (4) (Met by GEO 202)
☐ Cultural Diversity\footnote{CD} (3)
☐ Literature & the Arts\footnote{LA} (3)
☐ Social Processes & Institutions\footnote{SPI} (3)
☐ Western Culture\footnote{WC} (3)

Difference, Power & Discrimination (3 credits)
☐ Difference, Power & Discrimination (3)

Synthesis (6 credits - These two courses must be upper division, from different subjects, and may be met with electives.)
☐ Contemporary Global Issues (3)
☐ Science, Technology & Society (3)

Writing Intensive Course within Earth Sciences (4 credits)
☐ Met by GEOG 323 (4)

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 overall GPA in major coursework. Students cannot S/U major requirements.

Basic Math and Science Requirements (45 credits)
☐ MTH 251 Differential Calculus (4)
☐ MTH 252 Integral Calculus (4)
☐ MTH 254 Vector Calculus (4)
☐ 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 (35 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]
- GEO 323 Climatology WIC (4) [Sp]
- GEOG 480 Remote Sensing I: Principles and Appl. (4) [F]
- ATS 475 Planetary Atmospheres (3) [Alt even Sp]
- GEO 488 Quaternary Stratigraphy of N. Am. (3) [Alt odd F]
- 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 (3) [Sp]

### 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 420
- GEOG 102 or GEO 202 or GEO 221 or ATS 201 or OC 201
- MTH 111 and (CH 231 or CH 121) and (CH 232 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† (3)
  - ENGR 363 Energy Matters† (3)
  - FW 325 Global Crises in Research Ecology† (3)
  - GEOG 240 Climate Change, Water and Society† (3) [F]
  - GEOG 440 Water Resources Mgmt in the US (3) [Sp]
  - GEOG 441 Int’l Water Resources Management (3) [W]
  - OC 333 Oceans, Coasts, and People (3) [FSp]
  - PH 313 Energy Alternatives† (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† (3)
  - PS 455 The Politics of Climate Change† (4)
  - PS 473 United States 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 411 Thermo. & Cloud Microphysics (4) [Alt odd W]
- ATS 412 Atmospheric Radiation (3) [Alt odd Sp]
- ATS 475 Planetary Atmospheres (3) [Alt even Sp]
- GEO 433 Coastal Geomorphology (3) [Alt odd W]
- GEO 481 Glacial Geology (4) [Alt even F]
- GEO 488 Quaternary Stratigraphy of N. Am. (3) [Alt odd F]
- 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 (3) [Sp]

No more than two skills courses from below:
- GEOG 480 Remote Sensing I: Principles and Appl. (4) [F]
- GEOG 481 Remote Sensing II: Digital Image Proc. (4) [W]
- MTH 256 Applied Differential Equations (4)
- MTH 341 Linear Algebra I (3)
- ST 352 Introduction to Statistical Methods (4)
- WR 362 Science Writing (3)

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