



Program on Climate Change
UNIVERSITY OF WASHINGTON

Interested in learning about climate from many different angles? The climate minor guides you through an exploration of the science of climate through coursework in oceanography, atmospheric sciences, earth and space sciences and beyond. The minor was envisioned and is supported by the UW Program on Climate Change in the College of the Environment. Take a look at the courses required and contact us to identify your pathway.

For more information visit: <https://pcc.uw.edu/education/undergraduate-minor/>

Subscribe to the list serve: <https://mailman13.u.washington.edu/mailman/listinfo/climateminor>

Climate Minor Advising and information:
Miriam Bertram, uwpsc@uw.edu or (206) 543-6521

Requirements in brief:

1. Core climate course (3-5 cr) and skills course (3-5 cr); 2. Integrative capstone course (3 cr) 3. Science Electives (at least 12 cr) 4. Applications Elective (to reach a total of 25 cr). More detail below.

CORE COURSEWORK (6–10 credits)

One of...

- ESS 201: The Earth System and Climate (5) Spr
Prerequisites: MATH 124 or 144, or Q SCI 291
- ATM S 211: Climate and Climate Change (5) 2 of Aut, Win, Spr alternating annually
Prerequisites: None
- ATM S 321: Science of Climate (3) Spr
Prerequisites: 2.0 in MATH 124 & 125 & 126, and 2.0 in PHYS 121 & 122 & 123

One of...

- OCEAN/FISH 452: Spatial Information Technology in Ecosystem Sciences (3) Aut
Prerequisites: None
- AMATH 301: Beginning Scientific Computing (4) Aut, Win, Spr
Prerequisites: MATH 125 or 135, or Q SCI 292
- Q SCI 381: Introduction to Probability and Statistics (5) Aut, Win, Spr
Prerequisites: MATH 120, 124, 125, or 126, or Q SCI 190 or 291
- CSE 160: Data Programming (4) Win, Spr Formerly offered as CSE 140.
Prerequisites: None

INTEGRATIVE CAPSTONE EXPERIENCE

- ATM S/ESS/OCEAN 475: Current Research in Climate Science Seminar (3) Aut; Prerequisites: ESS 201 OR ATM S 211 or 321

SCIENCE ELECTIVES: At least one course from each of ATM S, ESS, and OCEAN. (minimum 12 credits). See next page for list.

APPLICATION ELECTIVE: One approved social science, policy, or energy course to reach 25 credits. See next page for list.

APPROVED SCIENCE ELECTIVES, students must take at least one course from each of ATM S, ESS, and OCEAN for at least 12 credits.

Atmospheric Sciences (one class)

- ATM S 301: Introduction to Atmospheric Sciences (5) Aut
Prerequisites: 2.0 in PHYS 121, 122, & 123, AND 2.0 in MATH 124, 125, & 126
- ATM S 340: Introduction to Thermodynamics and Cloud Processes (3) Win
Prerequisites: ATM S 301
- ATM S 341: Atmospheric Radiative Transfer (3) Spr
Prerequisites: ATM S 301
- ATM S 370: Atmospheric Structure and Analysis (5) Win
Prerequisites: ATMS 301
- ATM S 380: Weather and Climate Prediction (3) Win
Prerequisites: MATH 126, PHYS 122 & ESS 201 OR ATM S 101, 111, 150, 211, 301, 321
- ATM S 431: Boundary-Layer Meteorology (3) Aut
Prerequisites: PHYS 121, Recommended: ESS 310
- ATM S 358: Fundamentals of Atmospheric Chemistry (3) Spr
Prerequisites: None, Recommended: CHEM 142 & MATH 126 & PHYS 123
- ATM S 458: Global Atmospheric Chemistry (4) Aut
Prerequisites: None, Recommended: MATH 126 & PHYS 124 & ATMS 358 OR CHEM 162
- ATM S 487: Fundamentals of Climate Change (3) Aut
Prerequisites: ATMS 321

Earth and Space Sciences (one class)

- ESS 302 Great Ice Age (5) Aut
Prerequisite: either ESS 101, ESS 105, ESS 210 OR ESS 211
- ESS 315/ENVIR 313 Environmental Earth Science (5) Win
Prerequisite: either ESS 101, ESS 105, ESS 210 OR ESS 211.
- ESS 408: Great Geologic Issues (3) Spr
Prerequisites: None
- ESS 424/ATM S 460/PHYS 460: Water in the Environment (3) Spr
Prerequisites: ESS 310 OR MATH 126 OR MATH 136 & PHYS 123
- ESS 431: Principles of Glaciology (4) Aut
Prerequisites: PHYS 121, Recommended: ESS 310
- ESS 450: Paleobiology (3) Win
Prerequisites: None
- ESS 433: Environmental Change in the Glacial Ages (5) Aut
Prerequisites: None
- ESS 461: Geological Time (3) Aut
Prerequisites: None

Oceanography (one class)

- OCEAN 330: Marine Biogeochemical Cycles (5) Win
Prerequisites: OCEAN 210; OCEAN 295; BIOL 200.
- OCEAN 400: Chemical Oceanography (3) Win
Prerequisite: either CHEM 152 or CHEM 155; OCEAN 210.
- OCEAN 409: Marine Pollution (3) Win
Prerequisite: either OCEAN 200 or OCEAN 250; OCEAN 210.
- OCEAN 423: Ocean Circulation and Climate (3) Spr
Prerequisites: PHYS 123 AND MATH 125, Recommended: OCEAN 210

- OCEAN 450: Climatic Extremes (4) Win
Prerequisites: None
- OCEAN 482: The Changing Arctic Ocean (3) Spr
Prerequisites: None

APPLICATION OPTIONS (as needed to complete 25 credits, other courses may be acceptable):

- BIOL 315: Biological Impacts of Climate Change (3) Aut, Spr
Prerequisites: BIOL 180, or B BIO 180, or TESC 120
- ENVIR/FISH 330: Climate Change Impacts on Marine Ecosystems (5) Spr
Prerequisites: None
- CHEM E/M E 341: Energy and Environment (3) Aut
Prerequisites: MATH 112 or 114 OR Q SCI 291, AND CHEM 120 or 142, OR PHYS 114 or 121
- ARCTIC 391 Climate Change - An International Perspective: Science, Art, and Activism (5) Offered:
jointly with JSIS B 391, Honors 391; Spr.
Prerequisites: None
- ARCTIC 400 Integrating Policy and Science in Arctic Studies (3) I&S/NW Spr
Prerequisites: None
- ENVIR/PHIL 416: Ethics and Climate Change (5) Spr
Prerequisites: None
- CHEM E/M E 442: Renewable Energy (4) Win
Prerequisites: ME 323, CHEM E 325, AA 260, or EE 351
- FISH 464: Arctic Marine Vertebrate Ecology (4) Win
Prerequisites: BIOL 180
- GEOG 480: Environmental Geography, Climate, and Health (5) Spr
Prerequisites: GEO 280, 380, or 426

Other Details:

1. Minimum 2.00 cumulative GPA in courses applied to the minor
2. Minimum 15 credits taken through the UW
3. Minimum 18 credits outside student's major
4. Minimum 15 upper division credits