

Academic Planning Worksheet for B.S. in Atmospheric and Climate Science: Climate Option

Prerequisites: Math & Physics (30 credits total)

Besides **English composition**, these courses (or their equivalent) must be completed prior to registering for the first course in the Core ATMOS sequence. Students interested in majoring in Atmospheric and Climate Science should start taking these courses as soon as possible.

[MATH 124 Calculus with Analytic Geometry I](#) (5cr, AWSpS)

[MATH 125 Calculus with Analytic Geometry II](#) (5cr, AWSpS)

[MATH 126 Calculus with Analytic Geometry III](#) (5cr, AWSpS)

[PHYS 121 Mechanics](#) (5cr, AWSpS)

[PHYS 122 Electromagnetism](#) (5cr, AWSpS)

[PHYS 123 Waves, Light, and Heat](#) (5cr, AWSpS)

Statistics Requirement (4-5 credits total)

One of these courses should be completed as soon as possible, as it is a prerequisite for upper-division ATMOS coursework. Both courses have prerequisites. **STAT 390 is recommended for the Data Science Option.**

[Q SCI 381 Introduction to Probability and Statistics](#) (5cr; AWSpS) or

[STAT 390 Statistical Methods in Engineering and Science](#) (4cr, AWSpS)

Core – Atmospheric and Climate Science (ATMOS) (23 credits total)

These courses must be completed **in the order** listed below, beginning with ATMOS 301 in Autumn Quarter.

[ATMOS 220 Exploring the Atmospheric and Climate Science](#) (1cr)

[ATMOS 301 Introduction to Atmospheric Sciences](#) (5cr, Aut)

[ATMOS 340 Introduction to Thermodynamics and Cloud Processes](#) (3cr, Win)

[ATMOS 370 Atmospheric Structure and Analysis](#) (5cr, Win)

[ATMOS 321 The Science of Climate](#) (3cr, Spr)

[ATMOS 341 Atmospheric Radiative Transfer](#) (3cr, Spr)

[ATMOS 431 Boundary-Layer Meteorology](#) (3cr, Aut)

CLIMATE OPTION COURSEWORK (31-40 CREDITS TOTAL)

Courses listed below are required to complete a BS in Atmospheric and Climate Science in the Climate Option and are in addition to the [Atmospheric and Climate Science core coursework](#) and [UW College of Environment general education requirements](#).

Required Course List (22-25 credits total)

[ATMOS 358 Fundamentals of Atmospheric Chemistry](#) (3cr, Spr)

[ATMOS 380 Weather and Climate Prediction](#) (3cr, Win)

[ATMOS 350 Ecological Climatology](#) (3cr, Aut)

[ATMOS 487 Fundamentals of Climate Change](#) (3cr, Aut)

[ATMOS 310 Programming for Atmospheric Data Analysis](#) (3cr, Aut) or

[CSE 160 Data Programming](#) (4cr, AWSpS)

[ESS 431 Principles of Glaciology*](#) (4cr) or

[ESS 433 Environmental Change in the Glacial Ages*](#) (5cr, Spr)

*Please take one of these courses as soon as they are available, since not every course is offered in every academic year.

[OCEAN 423 Ocean Circulation and Climate*](#) (3cr, Spr) or

[OCEAN 450 Climatic Extremes*](#) (4cr, Win)

*Please take one of these courses as soon as they are available, since not every course is offered in every academic year.

Climate Electives (choose three)

[AMATH 351 Differential Equations](#) (3cr, AWSpS)

[AMATH 352 Applied Linear Algebra](#) (3cr, AWSpS)

[AMATH 353 Partial Differential Equations](#) (3cr, SpS)

[ATMOS 441 and 442 Atmospheric Motions I/II \(counts as two\)](#) (8cr, AW)

[ATMOS 451 Instruments and Observations](#) (4cr, Win)

[ATMOS 452 Weather Forecasting and Advanced Synoptic Meteorology](#) (5cr, Spr)

[ATMOS 588 The Global Carbon Cycle and Climate](#) (5cr)

[ENVR 384 Global Environmental Politics](#) (5cr)

[ENVR 416 Ethics and Climate Change](#) (5cr)

[ENVR 418 Communications and the Environment](#) (5cr)

[MATH 208 Matrix Algebra with Applications](#) (4cr, AWSpS)

[MATH 224 Advanced Multivariable Calculus](#) (4cr, AWSpS)

[OCEAN 200 Introduction to Oceanography](#) (3cr, Spr)

[OCEAN 210 Integrative Oceans](#) (4cr, Aut & Spr)

Two-Year Plan for Transfer Students (Climate Option)

| Year 1 (Junior Year) | | |
|--|---|---|
| Autumn Quarter | Winter Quarter | Spring Quarter |
| <input type="checkbox"/> ATMOS 301 (5) Introduction to Atmospheric Sciences | <input type="checkbox"/> ATMOS 340 (3) Introduction to Thermodynamics and Cloud Processes | <input type="checkbox"/> ATMOS 321 (3) The Science of Climate |
| <input type="checkbox"/> Q SCI 381 (5) <i>Introduction to Probability and Statistics</i> , or <input type="checkbox"/> STAT 390 (4) <i>Statistical Methods in Engineering and Science</i> | <input type="checkbox"/> ATMOS 370 (5) Atmospheric Structure and Analysis | <input type="checkbox"/> ATMOS 341 (3) Atmospheric Radiative Transfer |
| <input type="checkbox"/> ATMOS 310 (3) <i>Programming for Atmospheric Data Analysis</i> , or <input type="checkbox"/> CSE 160 (4) <i>Data Programming</i> | <input type="checkbox"/> ATMOS 380 (3) Weather and Climate Prediction | <input type="checkbox"/> ATMOS 358 (3) Fundamentals of Atmospheric Chemistry |
| | <input type="checkbox"/> ATMOS 220 (1) Exploring the Atmospheric and Climate Science | |
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| Year 2 (Senior Year) | | |
| Autumn Quarter | Winter Quarter | Spring Quarter |
| <input type="checkbox"/> ATMOS 350 (3) Ecological Climatology | <input type="checkbox"/> Elective 1 | <input type="checkbox"/> ESS 431 <i>Principles of Glaciology</i> , or <input type="checkbox"/> ESS 433 (4-5) <i>Environmental Change in the Glacial Ages</i> |
| <input type="checkbox"/> ATMOS 487 (3) Fundamentals of Climate Change | <input type="checkbox"/> Elective 2 | <input type="checkbox"/> Elective 3 |
| <input type="checkbox"/> ATMOS 431 (3) Boundary-Layer Meteorology | <input type="checkbox"/> OCEAN 450 (3-4) <i>Climatic Extremes (if not planning to take OCEAN 423)</i> | <input type="checkbox"/> OCEAN 423 <i>Ocean Circulation and Climate (if not taken OCEAN 450)</i> |
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Please refer to the following link for detailed course information and check the prerequisites for some of the upper-level courses:

<https://atmos.uw.edu/students/undergraduate-program/academic-program/climate-track/>