

# Environmental Science - Quantitative Environmental Science Concentration, BS

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←Return to: Programs of Study

Program Code: 121\*/121E

CIP Code: 40.0601

Non-Teaching

## General Education Requirements (41 Hours)

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- General Education Requirements

*CHE 1101/CHE 1110 & CHE 1102/CHE 1120 fulfill the Science Inquiry. MAT 1110 fulfills Quantitative Literacy.*

## Major Requirements (76 Hours)

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*Not including 12 hours counted in General Education Requirements, above*

2.0 major GPA is required for graduation. Major GPA calculation will include all courses taken in the major department, plus any other courses under Major Requirements. Minimum of 18 semester hours of courses taken to fulfill major requirements must be courses offered by Appalachian.

## Environmental Core Requirements (40-41 Hours)

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- GES 1010 - Introduction to Environmental Sciences (3)
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- GES 1101 - Introduction to Physical Geology (4)
- or
- advisor approved introductory geology course (4)
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- MAT 1110 - Calculus With Analytic Geometry I (4)
- MAT 1120 - Calculus With Analytic Geometry II (4)

*Sneak preview – coming in Fall 2024 (may have minor changes)*

- BIO 1802 - Biological Concepts II (4)
- CHE 1101 - Introductory Chemistry I (3)
- CHE 1110 - Introductory Chemistry Laboratory I (1)
- CHE 1102 - Introductory Chemistry II (3)
- CHE 1120 - Introductory Chemistry Laboratory II (1)
- PHY 1150 - Analytical Physics I (5)
- PHY 1151 - Analytical Physics II (5)
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- STT 2810 - Introduction to Statistics (3)
- or
- STT 2820 - Reasoning with Statistics (4)

## **Quantitative Environmental Science Concentration (39 Hours)**

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- GES 2250 - Evolution of the Earth (4)
- GES 2750 - Preparation for Careers in the Earth and Environmental Sciences (3) [WID]
- GES 2752 - Environmental Science Field Methods (1)
- GES 3140 - Quantifying Environmental Change (3)
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- GES 3310 - Global Biogeochemical Cycles (3)
- or
- CHE 3310 - Global Biogeochemical Cycles (3)
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- PHY 3160 - Introduction to Geophysics (3)
- or
- GES 3160 - Introduction to Geophysics (3)
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- GES 3455 - Quantitative Data Analysis for Earth and Environmental Scientists (3)
- GES 4025 - Introduction to Multivariate Data in the Earth and Life Sciences (3)
- GES 4630 - Hydrogeology (3)
- GES 4705 - Engineering Geology (3)
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- GHY 2812 - Geospatial Technology in a Changing World (3)
- or
- PLN 2812 - Geospatial Technology in a Changing World (3)
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- MAT 2130 - Calculus With Analytic Geometry III (4)
- MAT 2240 - Introduction to Linear Algebra (3)
- OR
- MAT 3130 - Introduction to Differential Equations (3)

## **Electives - Choose (7-8 Hours)**

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- GES 2751 - Geology Field Methods (2)
- GES 3150 - Principles of Structural Geology and Tectonics (3)
- GES 3333 - Geomorphology (3)
- GES 3800 - Sedimentology and Stratigraphy (3)
- GES 4501 - Senior Honors Research (1-3)
  
- GHY 3310 - Environmental Remote Sensing (3)
- GHY 3812 - Geographic Information Systems (3)
- GHY 4812 - GIS Analysis and Modeling (3)
- GHY 3100 - Weather and Climate (3)
- GHY 4820: Geographical Hydrology (3)
- GHY 4620 - Atmospheric Circulation (3)
  
- PHY 3140 - Environmental Physics (3)
- PHY 3150 - Atmospheric Science (3)
  
- STT 3820 - Statistical Methods I (3)
- STT 3850 - Statistical Data Analysis I (4)
- CS 1440 - Computer Science I (4)
- CS 2435 - Introduction to Scientific Programming (4)
  
- Elective - Advisor-approved elective at the 3000 level or above in GES, GHY, PHY, or CHE (3-4)

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## **Environmental Science Capstone Course (at least 1 Hour)**

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*(Prerequisite: Senior Standing)*

- GES 4105 - Analysis and Implications of Environmental Issues (1) [CAP]
- or
- GES 4510 - Senior Honors Thesis (3)

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## **Minor (Optional)**

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*Sneak preview – coming in Fall 2024 (may have minor changes)*

## **Electives (3 hours)**

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Taken to total 120 hours for the degree.

## **Total Required (120 Hours)**

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