EARTH AND ENVIRONMENTAL SCIENCE MAJOR WITH TEACHER CERTIFICATION IN EARTH SCIENCE (PRESCHOOL-GRADE 12) (B.S.)

Students who wish to pursue P-12 teacher certification in Earth Science must apply to and be admitted to the Teacher Education Program. Please visit the Teacher Education Program website (http://www.montclair.edu/cehs/academics/cop) for the required professional sequence of courses and other important Program requirements, guidelines, and procedures. Students are strongly advised to review the Teacher Education Program Handbook. The course PHED 401 The Teaching of Science in Secondary Schools is the departmental requirement.

A minimum of 120 credits of coursework is required for the baccalaureate degree with a minimum 2.0 overall GPA, and a minimum 2.0 major GPA. However, more than 120 credits may be required depending upon the major field of study.

Program Requirements

Students must complete 42 credits of General Education requirements (http://catalog.montclair.edu/undergraduate-graduate-degree-requirements/general-ed-ba-bs) and 3-9 credits of World Languages and Cultures Requirements (http://catalog.montclair.edu/undergraduate-graduate-degree-requirements/world-languages-cultures-requirement).

Required Courses

EAES 105 Physical Geology 4
EAES 220 Mineralogy 4
EAES 240 Historical Geology 4
EAES 302 Structural Geology 3
EAES 320 Igneous Metamorphic Petrology 4
EAES 342 Invertebrate Paleobiology 4
EAES 441 Stratigraphy 4

Collateral Chemistry Courses

CHEM 120 General Chemistry I 4
CHEM 121 General Chemistry II 4

Collateral Math Courses

Select one of the following sequences: 7-8

Math Sequence A

MATH 111 Applied Precalculus
or MATH 112 Precalculus Mathematics
MATH 116 Calculus A

Math Sequence B

MATH 122 Calculus I
MATH 221 Calculus II

Collateral Physics Courses

Select one of the following sequences: 8

Physics Sequence A

PHYS 191 University Physics I
& PHYS 192 and University Physics II

Physics Sequence B

PHYS 193 College Physics I
& PHYS 194 and College Physics II

Collateral Biology Courses

BIOL 112 Principles of Biology I 4
or BIOL 113 Principles of Biology II

Major Electives

Select 11 credits from the list below: 11

Total Credits 65-66

Major Electives

Meteorology
Select one of the following: 3-4
EAES 201 Understanding Weather and Climate
EAES 301 Climatology
EAES 403 Meteorology

Astronomy

PHYS 180 Descriptive Astronomy 3
or PHYS 280 Astronomy

Oceanography

Select one of the following: 3-4
EAES 150 General Oceanography
EAES 250 Introduction to Marine Sciences
EAES 350 Oceanography

Additional Electives

Select from the following to reach a total of 11 credits:

EAES 200 Geomorphology
EAES 204 Geology Field Trip
EAES 210 Introduction to GIS and Remote Sensing
EAES 211 Aerial Photograph Interpretation
EAES 212 Map Reading and Cartography
EAES 230 Hydrology
EAES 310 Geographic Information Systems (GIS)
EAES 311 Fundamentals of Remote Sensing of Environment
EAES 321 Economic Geology
EAES 322 Environmental Geochemistry
EAES 330 Fluvial Geography
EAES 331 Geohydrology
EAES 340 Sedimentology
EAES 341 Principles of Soil Science
EAES 404 Field Geology
EAES 454 Human Impact on the Coastal Zone
EAES 470 The Geology of New Jersey
EAES 494 Independent Study in Geoscience
EAES 498 Seminar in Geoscience
EAES 499 Sel Topics in Earth Environmental Studies: Glacial Deposits, Climate Archive Resource Potential

Total Credits 11