

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.

120 credits of coursework is required for the baccalaureate degree with a minimum 3.0 overall GPA. Major GPA requirements differ depending on field of study. Consult the Teacher Education Program Handbook for more information.

Program Requirements Overview

Code	Title	Credits
General Education Requirements		19
World Languages and Cultures Requirements		3-6
Major Requirements		60-62
Teacher Education Program Requirements		37
Free Electives		1-0
Total Credits		120-124

Major Requirements

Code	Title	Credits
Required Courses		
EAES 105	Physical Geology	4
EAES 220	Mineralogy	4
EAES 240	Earth System History	4
EAES 302	Structural Geology	3
EAES 320	Igneous Metamorphic Petrology	4
EAES 441	Stratigraphy	4
Collateral Chemistry Courses		
Complete one of the following sequences:		7-8
CHEM 100 & EAES 322	Introductory Chemistry and Environmental Geochemistry	
CHEM 120 & CHEM 121	General Chemistry I and General Chemistry II	
Collateral Math Courses		
Select two of the following sequences:		8
AMAT 120 or MATH 122	Applied Calculus A or Calculus I	
AMAT 220	Applied Calculus B	

or MATH 221		Calculus II
MATH 111	Applied Precalculus	
STAT 230	Data Science and Statistics	
Collateral Physics Courses		
Select one of the following sequences:		8
PHYS 191 & PHYS 192	University Physics I and University Physics II	
PHYS 193 & PHYS 194	College Physics I and College Physics II	
Collateral Biology Course		
BIOL 112 or BIOL 113	Principles of Biology I or Principles of Biology II	4
Major Electives		
Select one course each in Meteorology, Astronomy and Oceanography for a total of 10-11 credits from the list below.		10-11
Total Credits		60-62

Major Electives

Code	Title	Credits
<i>Meteorology</i>		
EAES 201	Understanding Weather and Climate	4
EAES 301	Climatology	3
EAES 403	Meteorology	4
<i>Astronomy</i>		
PHYS 180	Astronomy for Everyone	4
PHYS 280	Astronomy for Physicists	4
<i>Oceanography</i>		
EAES 150	General Oceanography	3
EAES 250	Introduction to Marine Sciences	4
EAES 350	Oceanography	3

Teacher Education Program Requirements (P-12)

Code	Title	Credits
Teacher Education Pre-Requisite Requirements		
EDFD 200 or PSYC 200 or FSHD 216	Psychological Foundations of Education, Educational Psychology, or Adolescent Development	3
SASE 210	Public Purposes of Education: Democracy and Schooling	3
Professional Sequence		
<i>Professional Sequence Courses</i>		
SASE 320	Curriculum Design for Inclusive Classrooms	3
SASE 321	Assessment Practices for Inclusive Classrooms	3
SASE 322	Language and Learning in Content Area Teaching	3
<i>Methods Course(s)</i>		
Select a Teaching Methods course or courses according to major:		3-7
ARED 401	Foundations of Methods and Curriculum in Art Education II: P-12 (Visual Arts major.)	
DNCE 402	Dance Methods (Dance major.)	
ENGL 471	Teaching English (secondary) (English major.)	
FREN 419	Teaching French in P-12: Practice (French major.)	

HLTH 401 & PEMJ 457	The Teaching of Health and Teaching of Secondary Physical Education (Physical Education major.)
ITAL 419	The Teaching of Italian in Elementary and Secondary Schools (Italian major.)
LATN 419	Methods of Teaching Latin (Latin major.)
LNGN 403	Methods and Material of TESL (Linguistics major.)
MATH 470	Teaching of Mathematics (Mathematics major.)
MUED 320 & MUED 321	Music Classroom Methods I and Music Classroom Methods II (Music major.)
SASE 401	Methods of Teaching Social Studies (History, Political Science, Psychology, or Sociology major.)
SASE 402	Methods of Teaching Science in Secondary Schools (Biology, Chemistry, Earth & Environmental Science or Physics major)
SPAN 418	Teaching Spanish in K-12 (Spanish major)
THTR 406	Theatre Teaching Methods (Theatre Studies major)

Professional Year Courses

SASE 450	Clinical Practice I	3
SASE 451	Seminar in Inclusive Pedagogies	3
SASE 452	Advanced Seminar in Inclusive Pedagogies	3
SASE 453	Clinical Practice II	9

Total Credits **36-40**

General Education Requirements

Click here for a list of courses that fulfill General Education categories. (<http://catalog.montclair.edu/undergraduate-graduate-degree-requirements/general-ed-ba-bs/>)

Code	Title	Credits
A. New Student Seminar		
	Complete a 1 credit New Student Seminar course.	1
C. Communication		
	1. <i>Writing</i>	3
	2. <i>Literature</i>	3
	Complete one course from D. Fine and Performing Arts or F1. Great Works and Their Influences or F2. Philosophical and Religious Perspectives.	3
G. Computer Science		
	Complete a 3 credit Computer Science course.	3
H. Mathematics		
	Fulfilled by collateral mathematics courses in the major.	0
I. Natural Science Laboratory		
EAES 105	Physical Geology (Fulfilled in the major.)	
K. Social Science		
	1. <i>Complete one course from K1. American and European History or K3. Social Science.</i>	3
	2. <i>Global Cultural Perspectives</i>	3
L. Interdisciplinary Studies		
SASE 210	Public Purposes of Education: Democracy and Schooling (Fulfilled in the Teacher Education sequence.)	
Total Credits		19

World Languages and Cultures Requirements

Click here for a list of courses that fulfill World Languages requirement. (<http://catalog.montclair.edu/undergraduate-graduate-degree-requirements/world-languages-cultures-requirement/>)

Code	Title	Credits
World Languages		
Based on placement exam complete one or two sequential courses in 3-6 the same language.		
Total Credits		3-6

Recommended Roadmap to Degree Completion

This recommended four-year plan is provided as an outline for students to follow in order to complete their degree requirements within four years. This plan is a recommendation and students should only use it in consultation with their academic advisor.