

EARTH AND ENVIRONMENTAL SCIENCE 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. Once admitted, students will be matriculated into the B.A. in Secondary Education (<http://catalog.montclair.edu/programs/secondary-education-p12-ba/>) program as a second major.

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.

Degree Requirements Overview

| Code | Title | Credits |
|----------------------|--|----------------|
| | New Student Seminar | 1 |
| | SEEDS General Education Requirements | 18-21 |
| | Major Requirements | 60-62 |
| | Teacher Education Program Requirements | 37 |
| | Free Electives | 4-0 |
| Total Credits | | 120-121 |

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 | Applied Calculus A | |

| | | |
|---|---|--------------|
| or MATH 12: 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: Introduction to the Cell or Principles of Biology: Organisms and Diversity | 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 |

Co-Major in Secondary Education

Secondary Education (B.A.) (<http://catalog.montclair.edu/programs/secondary-education-p12-ba/>)

New Student Seminar

| Code | Title | Credits |
|--|---|---------|
| Students in the Adult Learner program must take GNED 100. | | |
| Complete one course from the following. Some courses may be restricted by major. Consult with an academic advisor. | | 1 |
| ADVS 198 | Pathways to Success | |
| CHEM 190 | Freshman Seminar in Chemistry | |
| FYS 100 | First Year Seminar | |
| GNED 100 | Adult Academic Success Seminar | |
| GNED 199 | New Student Seminar | |
| HPEM 199 | Freshman Seminar in Health and Physical Education | |
| IDS 155 | Pathways to Adult Learning | |
| JUST 199 | New Student Seminar | |
| MATH 102 | New Student Experience for Mathematical Sciences | |

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|----------|---|
| MUGN 199 | Freshman Seminar for Music Majors |
| NURS 199 | Introduction to Nursing |
| POLS 199 | Freshman Seminar in Political Science and Law |

SEEDS General Education Requirements

Click here for a list of courses that fulfill the SEEDS requirements. (<http://catalog.montclair.edu/programs/seeds-general-education-requirements/>)

| Code | Title | Credits |
|---|--|--------------|
| Foundations | | |
| <i>Effective Writing I</i> | | |
| | Complete one Effective Writing I course. | 3 |
| <i>Effective Writing II</i> | | |
| | Complete one Effective Writing II course. | 3 |
| <i>Interactive Communication</i> | | |
| | Complete one Interactive Communication course. | 3 |
| <i>Quantitative Reasoning</i> | | |
| | Fulfilled by AMAT 120 or MATH 122 in the major. | |
| <i>Political and Civic Life</i> | | |
| | Fulfilled by SASE 210 in the Teacher Education requirements. | |
| <i>World Language</i> | | |
| | Complete two sequential classes in one World Language when starting at the Beginner I or Beginner II level. Complete one class when starting at the Intermediate/Advanced Level. | 3-6 |
| Exploration | | |
| | Complete one course from four different Exploration categories. | 6 |
| <i>Analyzing Cultures and Societies</i> | | |
| <i>Creative Expression</i> | | |
| <i>Ethical Inquiry</i> | | |
| | Fulfilled by EDFD 200 in the Education major. | |
| <i>Historical Thinking</i> | | |
| <i>Literary and Artistic Analysis</i> | | |
| <i>Scientific Reasoning</i> | | |
| | Fulfilled by EAES 101, EAES 105, or EAES 107 in the major. | |
| Total Credits | | 18-21 |