

# EARTH AND ENVIRONMENTAL SCIENCE (M.S.)

For details about this program, including program description, admission requirements, and contact information, click here (<https://www.montclair.edu/graduate/programs-of-study/earth-environmental-science-ms/>).

## Program Requirements

| Code   | Title                             | Credits   |
|--|-----------------------------------|-----------|
| <b>Required Core Courses</b>   |                                   |           |
| EAES 505   | Environmental Geoscience          | 3         |
| EAES 700   | Earth Systems Science             | 3         |
| <b>Research in Geoscience Literature</b>   |                                   |           |
| EAES 594   | Research in Geoscience Literature | 1         |
| <b>Required Specialization Courses and Free Electives</b>  |                                   |           |
| Complete a total of 22 semester hours if completing the Research option or 19 semester hours if completing the Thesis option from the lists below: |                                   | 22        |
| <b>Culminating Experience</b>  |                                   |           |
| Select one of the following two options:   |                                   | 3-6       |
| <b>Thesis (6 credits)</b>  |                                   |           |
| EAES 698   | Master's Thesis                   |           |
| Submit the completed Thesis original and one copy to the Graduate Office. See Thesis Guidelines for details.                                       |                                   |           |
| <b>Research &amp; Comprehensive Examination (3 credits)</b>  |                                   |           |
| EAES 593   | Research Seminar                  |           |
| GRAD CMP   | Comprehensive Examination         |           |
| In the semester you will sit for exam, register for the section which matches your major & advisor. Successfully pass exam.                        |                                   |           |
| <b>Total Credits</b>   |                                   | <b>32</b> |

## Specialization Courses

| Code  | Title                               | Credits |
|---|-------------------------------------|---------|
| <b>Required Specialization Courses</b>  |                                     |         |
| Complete 12-22 semester hours from the following. With the Thesis option, complete a minimum of 9 semester hours from one area of specialization. With the Research Seminar and Comprehensive Exam option, complete a minimum of 12 semester hours, either from one area of specialization only or from multiple areas. |                                     |         |
| <i>Earth Surface Processes and Hydrology</i>  |                                     |         |
| EAES 530  | Numerical Modeling of Earth Systems |         |
| EAES 531  | Hydroclimatology                    |         |
| EAES 532  | Applied Groundwater Modeling        |         |
| EAES 533  | Water Resource Management           |         |
| EAES 539  | Principles of Soil Science          |         |
| EAES 551  | Coastal Geomorphology               |         |
| <i>Environmental Quality and Remediation</i>  |                                     |         |
| EAES 526  | Geochemistry                        |         |
| EAES 528  | Environmental Forensics             |         |
| EAES 529  | Instrumental Environmental Analysis |         |
| EAES 586  | Urban Contamination                 |         |
| EAES 591  | Methods in Environmental Research   |         |

### *Geology and Geophysics*

|          |                                 |
|----------|---------------------------------|
| EAES 507 | Tectonics                       |
| EAES 508 | Field Geology                   |
| EAES 524 | Igneous and Metamorphic Geology |
| EAES 525 | X-ray Microanalysis             |
| EAES 535 | Geophysics                      |
| EAES 544 | Sedimentology                   |
| EAES 550 | Advanced Marine Geology         |

### *GIS and Remote Sensing*

|          |   |
|----------|---|
| EAES 510 | Geographic Information Systems                    |
| EAES 511 | Fundamentals of Remote Sensing of the Environment |
| EAES 610 | Spatial Analysis                                  |
| EAES 710 | Advanced Geographic Information Systems           |

**Total Credits** 0

## Free Elective Courses

| Code   | Title   | Credits  |
|--|---|----------|
| Up to 10 semester hours may be completed from the following: |   |          |
| EAES 506   | Introduction to Geographic Information Science and Remote Sensing |          |
| EAES 541   | Stratigraphy  |          |
| EAES 521   | Optical Mineralogy  |          |
| EAES 592   | Pro Seminar   |          |
| EAES 509   | Current Issues in Sustainability Science                          |          |
| EAES 562   | Waste Management  |          |
| EAES 563   | Natural Resource Management                                       |          |
| EAES 565   | Environmental Change and Communication                            |          |
| EAES 575   | Environmental Economics   |          |
| EAES 660   | Seminar in Environmental Management                               |          |
| BIOL 550   | Special Topics in Microbiology                                    |          |
| BIOL 570   | Ecology   |          |
| HLTH 502   | Determinants of Environmental Health                              |          |
| HLTH 528   | Program Planning and Evaluation                                   |          |
| HLTH 565   | Foundations of Epidemiology                                       |          |
| CHEM 510   | Hazardous Materials Management                                    |          |
| CHEM 534   | Separation and Analysis   |          |
| CHEM 570   | Advanced Biochemistry   |          |
| STAT 532   | Fundamentals of Statistics  |          |
| <b>Total Credits</b>   |   | <b>0</b> |