**EARTH SCIENCE, BS**

**Banner Code:** SC-BS-ESCI

**Dr. Stacey Verardo, Undergraduate Coordinator and Term Professor**

Research Hall, Room 109  
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Email: sverardo@gmu.edu  
Website: cos.gmu.edu/aoes/academics/undergraduate-programs/

This degree is intended for students interested in studying the Earth and its processes. Students receive a broad background in the Earth sciences and select one of five specialty concentrations. The concentrations in Earth surface processes, environmental geoscience, geology, and paleontology are solely offered by the Department of Atmospheric, Oceanic and Earth Sciences. The concentration in oceanography and estuarine science is offered jointly with the Department of Environmental Science and Policy, where specific advising is also available.

This is a Green Leaf program.

**Teacher Licensure**

Students who wish to become teachers and plan to seek teacher licensure should consider the following options:

- Secondary Education – Earth Science (6-12) Undergraduate Certificate
- Earth Science, BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Earth Science concentration)

Interested students should attend an information session early in their undergraduate career. For more information, visit the Graduate School of Education’s website (http://gse.gmu.edu).

**Admissions & Policies**

**Admissions**

University-wide admissions policies can be found in the Undergraduate Admissions Policies section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

**Policies**

Students must fulfill all Requirements for Bachelor’s Degrees, including the Mason Core.

For policies governing all undergraduate degrees, see AP.5 Undergraduate Policies.

**Writing Intensive Requirement**

GEOL 317 Geomorphology fulfills the writing intensive requirement for this major, with the exception of:

- The Environmental Geoscience Concentration, whereby GEOL 305 Environmental Geology fulfills the writing intensive requirement.

- The Paleontology Concentration, whereby GEOL 334 Vertebrate Paleontology fulfills the writing intensive requirement.

**Requirements**

**Degree Requirements**

Total credits: minimum 120

Students should refer to the Admissions & Policies tab for specific policies related to this program.

Students must complete the all coursework with a minimum GPA of 2.00.

**Core Science and Mathematics**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 101</td>
<td>Introductory Geology I (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 309</td>
<td>Introduction to Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>or BIOL 309</td>
<td>Introduction to Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 406</td>
<td>Seminar in Earth and Environmental Science</td>
<td>3</td>
</tr>
<tr>
<td>or GEOL 420</td>
<td>Earth Science and Policy (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 211</td>
<td>General Chemistry I (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 213</td>
<td>and General Chemistry Laboratory I (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 212</td>
<td>General Chemistry II (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CHEM 214</td>
<td>and General Chemistry Laboratory II (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 113</td>
<td>Analytic Geometry and Calculus I (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following options: 3-4

**Option A:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIM 111</td>
<td>Introduction to the Fundamentals of Atmospheric Science (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>CLIM 112</td>
<td>Introduction to the Fundamentals of Atmospheric Science Lab (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Option B:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 111</td>
<td>Introduction to the Fundamentals of Atmospheric Science (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 112</td>
<td>Introduction to the Fundamentals of Atmospheric Science Lab (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Option C:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 309</td>
<td>Meteorology and Climate</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 32-33

**Physics**

Select one 8-credit sequence from the following: 8

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 160</td>
<td>University Physics I (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>&amp; PHYS 161</td>
<td>and University Physics I Laboratory (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>&amp; PHYS 260</td>
<td>(Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td>&amp; PHYS 261</td>
<td>and University Physics II (Mason Core)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>and University Physics II Laboratory (Mason Core)</td>
<td>4</td>
</tr>
</tbody>
</table>
Concentration in Earth Surface Processes (EP)

This concentration focuses on a broad understanding of the physical processes and natural materials found at or near the Earth’s surface that have produced the primary landforms and landscapes observed today. Fundamental concepts, methods and techniques of landscape analysis are also examined. Students choosing this concentration must complete the following coursework:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 102</td>
<td>Introductory Geology II (Mason Core)</td>
</tr>
<tr>
<td>or EVPP 110</td>
<td>The Ecosphere: An Introduction to Environmental Science I (Mason Core)</td>
</tr>
<tr>
<td>GEOL 302</td>
<td>Mineralogy</td>
</tr>
<tr>
<td>GEOL 303</td>
<td>Field Mapping Techniques</td>
</tr>
<tr>
<td>GEOL 306</td>
<td>Soil Science</td>
</tr>
<tr>
<td>GEOL 317</td>
<td>Geomorphology</td>
</tr>
<tr>
<td>GGS 311</td>
<td>Introduction to Geographic Information Systems</td>
</tr>
</tbody>
</table>

Select 10-15 credits from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 304</td>
<td>Sedimentary Geology</td>
</tr>
<tr>
<td>GEOL 305</td>
<td>Environmental Geology</td>
</tr>
<tr>
<td>GEOL 313</td>
<td>Hydrogeology</td>
</tr>
<tr>
<td>GEOL 315</td>
<td>Topics in Geology II</td>
</tr>
<tr>
<td>GEOL 363</td>
<td>Coastal Morphology and Processes</td>
</tr>
<tr>
<td>GEOL 401</td>
<td>Structural Geology</td>
</tr>
<tr>
<td>GEOL 403</td>
<td>Geochemistry</td>
</tr>
<tr>
<td>GEOL 417</td>
<td>Geophysics</td>
</tr>
</tbody>
</table>

Total Credits: 31-36

1. Fulfills writing intensive requirement.
2. GEOL 302 Mineralogy with a C or better is required as a prerequisite.

Concentration in Environmental Geoscience (EVGS)

This concentration provides the tools for applying geologic information (on soils, rocks, water, weather, and landscapes) to contemporary environmental problems (including: pollution, waste management, resource extraction, natural hazards, land-use, habitat restoration, species preservation, and human health). Environmental geoscience studies the physical environment in which biological interactions take place, whereby aiding the understanding of ecology. Students choosing this concentration must complete the following coursework:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 102</td>
<td>Introductory Geology II (Mason Core)</td>
</tr>
<tr>
<td>GEOL 302</td>
<td>Mineralogy</td>
</tr>
<tr>
<td>GEOL 305</td>
<td>Environmental Geology</td>
</tr>
<tr>
<td>GEOL 306</td>
<td>Soil Science</td>
</tr>
<tr>
<td>GEOL 313</td>
<td>Hydrogeology</td>
</tr>
<tr>
<td>GEOL 320</td>
<td>Geology of Earth Resources</td>
</tr>
<tr>
<td>GEOL 321</td>
<td>Geology of Energy Resources</td>
</tr>
<tr>
<td>GEOL 403</td>
<td>Geochemistry</td>
</tr>
<tr>
<td>or CHEM 427</td>
<td>Aquatic Environmental Chemistry</td>
</tr>
</tbody>
</table>

Total Credits: 34

1. Prerequisite requires a grade of ‘C’ or better in GEOL 302 Mineralogy
2. Fulfills writing intensive requirement.
3. A 6-credit geology field camp may be substituted for this requirement, see advisor for details.

Concentration in Oceanography and Estuarine Science (OEST)

This concentration provides students with a comprehensive knowledge of oceanography. Additional coursework in physical and chemical oceanography give insight into the aquatic environment and its link to both ecosystems and climate. Within the concentration, students can choose an open ocean or coastal ocean option. The curriculum will
emphasize local and regional case studies, in particular the Chesapeake Bay. The program will provide students with the basic training required to allow them to obtain entry level positions in oceanographic and estuarine career tracks or an appropriate graduate degree program. Students choosing this concentration must complete the following coursework:

**CLIM 412**  
Physical Oceanography  
(or **GEOL 412**  
Physical Oceanography)

**GEOL 102**  
Introductory Geology II (Mason Core)

**GEOL 458**  
Chemical Oceanography  
(or **CHEM 458**  
Chemical Oceanography)

Select one of the following 8-credit sequences:  
**BIOL 103**  
Introductory Biology I (Mason Core)  
& **BIOL 104**  
and Introductory Biology II (Mason Core)

**BIOL 213**  
Cell Structure and Function (Mason Core)  
& **BIOL 303**  
and Animal Biology

**EVPP 110**  
The Ecosphere: An Introduction to Environmental Science I (Mason Core)  
& **EVPP 111**  
The Ecosphere: An Introduction to Environmental Science II (Mason Core)

Select one of the following options:  
15-16

**Open Ocean Option:**
- **GEOL 364**  
Marine Geology
- **BIOL 449**  
Marine Ecology

Three additional courses from the electives list below (minimum of 9 credits)

**Coastal Ocean Option:**
- **GEOL 363**  
Coastal Morphology and Processes
- **EVPP 581**  
Estuarine and Coastal Ecology

Three additional courses from the electives list below (minimum of 9 credits)

**Electives**
- **GEOL 302**  
Mineralogy  
4
- **GEOL 304**  
Sedimentary Geology  
4
- **GEOL 308**  
Igneous and Metamorphic Petrology  
4
- **GEOL 312**  
Invertebrate Paleontology  
4
- **GEOL 363**  
Coastal Morphology and Processes  
4
- **GEOL 364**  
Marine Geology  
3
- **GEOL 565**  
Paleoceanography  
3
- **BIOL 440**  
Field Biology  
1  
Fulfills writing intensive requirement for this concentration only.
- **BIOL 449**  
Marine Ecology  
3
- **EVPP 350**  
Freshwater Ecosystems  
4
- **EVPP 377**  
Applied Ecology  
3
- **EVPP 419**  
Marine Mammal Biology and Conservation  
3
- **EVPP 581**  
Estuarine and Coastal Ecology  
3
- **EVPP 582**  
Estuarine and Coastal Ecology Laboratory  
1
- **INTS 395**  
Field-Based Work  
1-18

Additional recommended course:
- **RECR 161**  
Scuba Diving: Basic  
2

**Concentration in Paleontology (PLEO)**

This concentration focuses on a broad understanding of Earth’s history and the evolution of life on Earth as revealed through the fossil record. Fundamental concepts, methods and techniques of historical geology and paleontological data and analysis are also examined. This concentration may not be taken in conjunction with the paleontology minor. Be aware that some of the courses below may have additional prerequisites. Students choosing this concentration must complete the following coursework:

**GEOL 102**  
Introductory Geology II (Mason Core)  
4

**GEOL 302**  
Mineralogy  
4

**GEOL 304**  
Sedimentary Geology  
4

**GEOL 312**  
Invertebrate Paleontology  
4

**GEOL 334**  
Vertebrate Paleontology  
4

**BIOL 103**  
Introductory Biology I (Mason Core)  
4

(or **BIOL 213**  
Cell Structure and Function (Mason Core))

Select 9-10 credits from the following additional Geology courses:

**GEOL 306**  
Soil Science  
3

**GEOL 317**  
Geomorphology  
3

**GEOL 332**  
Paleoclimatology  
3

**GEOL 364**  
Marine Geology  
3

**GEOL 403**  
Geochemistry  
3

**GEOL 412**  
Physical Oceanography  
3

**GEOL 458**  
Chemical Oceanography  
3

**GEOL 565**  
Paleoceanography  
3

Select 3-5 credits from the following additional Biology course:

**BIOL 310**  
Biodiversity  
1  
Fulfills writing intensive requirement for this concentration only.

& **BIOL 330**  
and Biodiversity Lab and Recitation

**BIOL 320**  
Comparative Chordate Anatomy

**BIOL 331**  
Invertebrate Zoology

**BIOL 374**  
Biogeography: Space, Time, and Life  
1  
Fulfills writing intensive requirement for this concentration only.

or **GGS 321**  
Biogeography

**BIOL 468**  
Vertebrate Natural History  
1  
Fulfills writing intensive requirement for this concentration only.

or **EVPP 468**  
Vertebrate Natural History

**BIOL 470**  
Dinosaur Biology

**BIOL 471**  
Evolution  
3

**Total Credits**  
36-39

**Mason Core and Elective Credits**

In order to meet a minimum of 120 credits, this degree requires additional credits (specific credit counts by concentration are shown below), which may be applied toward any remaining Mason Core requirements, Requirements for Bachelor’s Degrees, and elective courses. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

- ESE concentration without Teacher Licensure: 50-51 credits
- ESE concentration with Teacher Licensure: 29-30 credits
- EP concentration: 43-49 credits
- EVGS concentration: 38-45 credits
- GEOL concentration: 45-46 credits
Earth Science, BS

- PLEO concentration: 40-44 credits
- OEST concentration: 42-47 credits

Mason Core
Note: Some Mason Core requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Foundation Requirements</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Written Communication</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Quantitative Reasoning</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Information Technology</td>
<td>3-7</td>
</tr>
<tr>
<td></td>
<td><strong>Core Requirements</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Global Understanding</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Literature</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Natural Science</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Social and Behavioral Sciences</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Western Civilization/World History</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Synthesis/Capstone Requirement</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Synthesis/Capstone</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</strong></td>
<td>40</td>
</tr>
</tbody>
</table>

1 minimum 3 credits

Honors

Honors in the Major
Earth science and geology majors who have completed 16 credits of math and science, including GEOL 302 Mineralogy with a GPA of 3.00 or higher are eligible to enter the departmental honors program. Transfer students who have an incoming GPA of 3.10 or higher in math and science and a grade of ‘B’ or better in GEOL 302 Mineralogy are also eligible. To graduate with honors in Earth Science, students are required to maintain a minimum GPA of 3.00 in math and science courses and complete one of the two following sets of courses with an average GPA of 3.50 or better:

Course List
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>First Set of Courses</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GEOL 410 Research Proposal Preparation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>GEOL 411 Geological Research</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>GEOL 420 Earth Science and Policy (Mason Core)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Second Set of Courses</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CLIM 408 Senior Research</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CLIM 409 Research Internship</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>GEOL 420 Earth Science and Policy (Mason Core)</td>
<td>3</td>
</tr>
</tbody>
</table>

Accelerated Master’s

Bachelor’s Degree (Green Leaf)/Environmental Science and Policy, Accelerated MS

Overview
This degree option allows highly qualified George Mason University students to earn an Environmental Science and Policy, MS in less time than if they had first graduated with an environmentally-focused Green Leaf-designated BA or BS degree and then applied to the MS program sequentially.

For more detailed information, see AP.6.7 Bachelor’s/Accelerated Master’s Degrees. For policies governing all graduate programs, see AP.6 Graduate Policies.

Admission Requirements
Students with an overall GPA of at least 3.20 who are pursuing any Green Leaf-designated major or minor may apply for provisional acceptance into this accelerated master’s program after completing two semesters of chemistry (including CHEM 211 General Chemistry I (Mason Core) and CHEM 212 General Chemistry II (Mason Core)) and three semesters of biology, including a course in ecology, or the equivalent, for example:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Option 1:</strong></td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>BIOL 213 Cell Structure and Function (Mason Core)</td>
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</tr>
<tr>
<td></td>
<td>BIOL 214 Biostatistics for Biology Majors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BIOL 308 Foundations of Ecology and Evolution</td>
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<tr>
<td></td>
<td><strong>Option 2:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EVPP 210 Environmental Biology: Molecules and Cells</td>
<td></td>
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<tr>
<td></td>
<td>EVPP 301 Environmental Science: Biological Diversity and Ecosystems</td>
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<td></td>
<td>EVPP 302 Environmental Science: Biomes and Human Dimensions</td>
<td></td>
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<td></td>
<td>EVPP 305 Environmental Microbiology Essentials</td>
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</tr>
<tr>
<td></td>
<td>EVPP 306 Environmental Microbiology Essentials Laboratory</td>
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<tr>
<td></td>
<td><strong>Option 3:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CONS 401 Conservation Theory</td>
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<tr>
<td></td>
<td>CONS 402 Applied Conservation</td>
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<tr>
<td></td>
<td>6 credits of 6 credits of BIOL or CONS electives</td>
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<td></td>
<td><strong>Option 4:</strong></td>
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<tr>
<td></td>
<td>CONS 403 Ecology and Conservation Theory</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CONS 404 Biodiversity Monitoring</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BIOL or CONS electives</td>
<td></td>
</tr>
</tbody>
</table>

By the beginning of the undergraduate’s senior year, they should first submit a Graduate Application for Accelerated Master’s Program form (obtained from the Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us)). Secondly, in their senior year accelerated master’s students must complete the two graduate courses indicated on their Accelerated Master’s Program Application with a
minimum grade of 3.00 in each course. They must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. Upon completion and conferment of the undergraduate degree in a Green Leaf-designated program, in the semester indicated in the application, they must additionally submit the Bachelor’s/Accelerated Master’s Transition form (found on the Office of the University Registrar website (http://registrar.gmu.edu/forms)) and will subsequently be admitted into graduate status.

By at least the beginning of their senior year, they should seek out a faculty member in the Department of Environmental Science and Policy who is willing to serve as their advisor (unless the student is planning to enroll in the MS concentration in Environmental Management). This advisor will aid the student in choosing the appropriate graduate courses to take and help to prepare the student for graduate studies. Admission into a research-oriented master’s concentration is dependent upon securing the agreement of a faculty advisor. Faculty from a variety of departments and colleges at George Mason (called “program faculty”) can serve as master’s advisors. Potential students are encouraged to speak with the graduate program coordinator in the department to obtain guidance on this issue.

Application Requirements
Applicants to all graduate programs at Mason must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies section of this catalog, excluding the GRE exam requirement (which is not required for those enrolled in the accelerated program). This includes three letters of recommendation (at least one from a former professor or someone with a PhD), a recent resume, a statement of interest/research goals and interests (including information on the candidate’s proposed MS research), and a letter from their advisor stating that the advisor agrees to take on the candidate as an MS student, how the candidate would be a good fit for them and why candidate’s research topic would be suitable (please note that a letter of endorsement from an advisor not necessary for candidates taking the Environmental Management concentration).

For information specific to the accelerated Environmental Science and Policy, MS, see Graduate Admissions on the department’s website (http://esp.gmu.edu/academic-programs/graduate/admissions).

Reserve Graduate Credits
Students admitted to this program may take graduate courses after completing 90 undergraduate credits, and up to 6 credits of appropriate environmentally-focused graduate coursework may be used in partial satisfaction of the requirements for the undergraduate program. If students earn at least a 3.00 GPA in these classes, they are granted advanced standing in the master’s program and must then complete an additional 27-31 credits to receive the master’s degree.

To apply these credits to the master’s degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor’s/Accelerated Master’s Transition form found on the Office of the University Registrar website (http://registrar.gmu.edu/forms) (as noted above).

Students may take up to 6 additional environmentally-focused graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree but will reduce the subsequent master’s degree credits accordingly (e.g., with 6 credits counted towards undergraduate degree plus the maximum 6 reserve credits, an MS could be completed with 21 post-bachelor’s credits). The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the department.

Earth Science, BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Earth Science concentration)
Overview
Highly-qualified undergraduates may be admitted to the bachelor’s/accelerated master’s option and obtain both a BS in Earth Science and an MEd in Curriculum and Instruction (concentration in secondary education earth science) in an accelerated time-frame after satisfactory completion of 149 credits. See AP.6.7 Bachelor’s/Accelerated Master’s Degree for policies related to this program.

This accelerated option is offered jointly by the Department of Atmospheric, Oceanic and Earth Sciences and the Graduate School of Education.

Students in an accelerated degree program must fulfill all university requirements for the master’s degree. For policies governing all graduate degrees, see AP.6 Graduate Policies.

Application Requirements
Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admissions Policies. For information specific to this accelerated master’s program, see Application Requirements and Deadlines (https://cehd.gmu.edu/bachelors-accelerated-masters-program).

Accelerated Option Requirements
Requirements
Students complete the following courses in their senior year:

<table>
<thead>
<tr>
<th>Senior</th>
<th>Fall Semester</th>
<th>Credits</th>
<th>Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDCI 573</td>
<td>3</td>
<td>EDCI 673</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>EDUC 672</td>
<td>3</td>
<td>EDRD 619</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 12

While undergraduate students, accelerated master’s students are able to apply two of the courses listed above to both the bachelor’s and master’s degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor’s/Accelerated Master’s Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.