Geology Major Requirements  
Catalog Year: 2015-16  
Degree: Bachelor of Science  
Credit Hours: 65+  

“PR” indicates a pre-requisite. “CO” indicates a co-requisite.

Courses within this major may also satisfy general education requirements. Please consult http://registrar.cofc.edu/general-edu for more information.

Required Courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Pre-requisites</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 103</td>
<td>Environmental Geology (3)</td>
<td>PR: None; CO: GEOL 103L</td>
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<tr>
<td>GEOL 103L</td>
<td>Environmental Geology Lab (1)</td>
<td>CO: GEOL 103</td>
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<tr>
<td>GEOL 105</td>
<td>Earth History (3)</td>
<td>PR: GEOL 103 and 103L or HONS 155 and 155L; CO: GEOL 105L</td>
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<tr>
<td>GEOL 105L</td>
<td>Earth History Lab (1)</td>
<td>PR: GEOL 103L or HONS 155L; CO: GEOL 105</td>
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<tr>
<td>GEOL 256</td>
<td>Mineralogy and Petrology (4)</td>
<td>PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L</td>
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<tr>
<td>GEOL 272</td>
<td>Stratigraphy and Sedimentation (4)</td>
<td>PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L or instructor permission</td>
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<tr>
<td>GEOL 291</td>
<td>Water Resources (4)</td>
<td>PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L, CHEM 111/111L, and MATH 111; or instructor permission</td>
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<tr>
<td>GEOL 333</td>
<td>Paleobiology (4)</td>
<td>PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L or instructor permission</td>
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<tr>
<td>GEOL 352</td>
<td>Structural Geology (4)</td>
<td>PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L; MATH 111 or 120 or instructor permission</td>
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<tr>
<td>GEOL 360</td>
<td>Field Studies (4)</td>
<td>PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and GEOL 272, and 352 or instructor permission. Under special circumstances, a student may petition the department to substitute an equivalent field experience.</td>
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<tr>
<td>GEOL 492</td>
<td>Senior Seminar (1)</td>
<td>PR: Senior standing as a GEOL major</td>
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</table>

Select 9 credit hours from the following with at least 6 credit hours at the 250-level or above with a maximum of 3 credit hours from GEOL 260, 260L, and 460L:

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Pre-requisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 206</td>
<td>Planetary Geology (3)</td>
<td>PR: GEOL 103 and 103L or HONS 155 and 155L</td>
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<tr>
<td>GEOL 213</td>
<td>Natural Hazards (3)</td>
<td>PR: GEOL 103 and 103L or HONS 155 and 155L</td>
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<tr>
<td>GEOL 235</td>
<td>Geology and Civilization (3)</td>
<td>PR: GEOL 103 and 103L or HONS 155 and 155L</td>
</tr>
<tr>
<td>GEOL 240</td>
<td>Special Topics in Geology (1-4)</td>
<td>PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L or instructor permission</td>
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<tr>
<td>GEOL 257</td>
<td>Marine Geology (4)</td>
<td>PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L or instructor permission.</td>
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<tr>
<td>GEOL 260</td>
<td>NASA Space Mission Design (2)</td>
<td>PR: GEOL 103 and 103L or HONS 155 and 155L and GEOL 206 or instructor permission; CO: GEOL 260L or GEOL 460L</td>
</tr>
<tr>
<td>GEOL 260L</td>
<td>NASA Space Mission Design Lab (1)</td>
<td>PR: GEOL 206 or instructor permission; CO: GEOL 260</td>
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<tr>
<td>GEOL 460L</td>
<td>NASA Space Mission Design Leadership Lab (1)</td>
<td>PR: Instructor permission; CO: GEOL 260</td>
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<tr>
<td>GEOL 275</td>
<td>Geomorphology (4)</td>
<td>PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L or instructor permission</td>
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</tbody>
</table>
GEOL 303  Independent Study in Geology (1-3) PR: Junior standing or departmental approval

GEOL 312  Environmental Field Methods (3) PR: GEOL 103 and 103L and GEOL 105 and 105L and HONS 155 and 155L and HONS 156 and 156L and GEOL 272 or instructor permission

GEOL 314  Introduction to Remote Sensing (4) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L or instructor permission

GEOL 320  Earth Resources (3) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and GEOL 256

GEOL 357  Oceanographic Research—The Transect Program (4) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and GEOL 257 or instructor permission

GEOL 360  Field Studies (4) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and GEOL 272, and 352 or instructor permission. Under special circumstances, a student may petition the department to substitute an equivalent field experience.

GEOL 411  Tectonics (3) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 156 and 156L and GEOL 272 and 352 or instructor permission

GEOL 412  Crustal Geophysics (3) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and MATH 120 and GEOL 352 or instructor permission

GEOL 416  Paleocology (4) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and GEOL 272, 333, and 430 or instructor permission

GEOL 430  Sedimentary Petrology (4) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L

GEOL 434  Geology of the Carolinas (3) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and GEOL 272 and 352 or instructor permission

GEOL 438  Hydrogeology (4) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and MATH 111 or 120 or instructor permission

GEOL 440  Igneous & Metamorphic Petrology (4) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L

GEOL 444  Quantitative Hydrogeology (3) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and MATH 220 and GEOL 438 or instructor permission

GEOL 449  Geographical Information Systems (4) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L or instructor permission. Some computer experience is helpful.

Chemistry Requirement

☐ CHEM 111 Principles of Chemistry (3) PR or CO: unless students exempt MATH 111 (via diagnostic testing) or have completed this course as a prerequisite, they are required to take MATH 111 as a co-requisite; CO: CHEM 111L

☐ CHEM 111L Principles of Chemistry Lab (1) CO: CHEM 111

AND

☐ CHEM 112 Principles of Chemistry (3) PR: CHEM 111 and 111L; CO: CHEM 112L

☐ CHEM 112L Principles of Chemistry Lab (1) CO: CHEM 112L

OR

☐ GEOL 250 Introduction to Geochemistry (4) PR: GEOL 103/103L and GEOL 105/105L or HONS 155/155L and HONS 156/156L and CHEM 111/111L

Complete a sequence of 8 credit hours in either Physics or Biology:

☐ ___________  ☐ ___________ lab  ☐ ___________  ☐ ___________ lab
PHYS 101  Introductory Physics (3) PR: None; CO or PR: PHYS 101L
PHYS 101L Introductory Physics Lab (1) CO: PHYS 101L
AND
PHYS 102  Introductory Physics II (3) PR: PHYS 101 or PHYS 111 or HONS 157; CO: PHYS 102L
PHYS 102L Introductory Physics Lab (1) CO: PHYS 102L

OR

PHYS 111  General Physics I (3) PR or CO: MATH 120 or equivalent or instructor permission; CO: PHYS 111L
PHYS 111L General Physics I Lab (1) CO: PHYS 111
AND
PHYS 112  General Physics II (3) PR: PHYS 111 or HONS 157; CO or PR: MATH 220 or equivalent or instructor permission; CO: PHYS 112L
PHYS 112L General Physics II Lab (1) CO: PHYS 112

OR

BIOL 101  Concepts and Applications in Biology I (4) PR: None; CO: BIOL 101L
AND
BIOL 102  Concepts and Applications in Biology II (4) PR: BIOL 101 and 101 lab; CO: BIOL 102L

OR

BIOL 111  Introduction to Cell and Molecular Biology (3) PR: None; CO: BIOL 111L
BIOL 111L Introduction to Cell and Molecular Biology Lab (1) CO: BIOL 111
AND
BIOL 112  Evolution, Form, and Function of Organisms (3) PR: BIOL 111 and 111L; CO: BIOL 112L
BIOL 112L Evolution, Form, and Function of Organisms Lab (1) CO: BIOL 112

Math Requirement

☐ MATH 120 Introductory Calculus (4) PR: Placement or C- or better in MATH 111
☐ MATH 220 Calculus II (4) PR: MATH 120 or HONS 115
OR
☐ MATH 250 Statistical Methods (3) PR: MATH 105 with a C- grade or better or MATH 111 or MATH 120 or permission of instructor

Optional: Students may also select an emphasis in Environmental Geosciences.

Environmental Geosciences Emphasis (12 credit hours)

Required Courses

☐ GEOL 438 Hydrogeology (4) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and MATH 111 or 120 or instructor permission
☐ GEOL 441 Pollution in the Environment (4) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and CHEM 111 and 111L and CHEM 112 and 112L or GEOL 250; GEOL 291; or the equivalent; or instructor permission

Select 4 credit hours from the following:

☐ GEOL 257 Marine Geology (4) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L or instructor permission.
☐ GEOL 275 Geomorphology (4) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L or instructor permission.
☐ GEOL 303 Independent Study in Geology (1-3) PR: Junior standing or departmental approval.
GEOL 312 Environmental Field Methods (3) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and GEOL 272 or instructor permission

GEOL 314 Introduction to Remote Sensing (4) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L or instructor permission

GEOL 320 Earth Resources (3) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and GEOL 256

GEOL 360 Field Studies (4) PR: GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and GEOL 272, and 352 or instructor permission. Under special circumstances, a student may petition the department to substitute an equivalent field experience.

GEOL XXX Other suitable electives as approved by the department. Consult with your faculty advisor.

Notes:
- Computer science courses and Geology 360 Field Studies are recommended.