Geology Major Requirements
Catalog Year: 2014-15
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:

☐ GEOL 101  Dynamic Earth (3) PR: None; CO: GEOL 101L
☐ GEOL 101L  Dynamic Earth Lab (1) CO: GEOL 101

OR

☐ GEOL 103  Environmental Geology (3) PR: None; CO: GEOL 103L
☐ GEOL 103L  Environmental Geology Lab (1) CO: GEOL 103

☐ GEOL 105  Earth History (3) PR: GEOL 101 and 101L or GEOL 103 and 103L or HONS 155 and 155L; CO: GEOL 105L
☐ GEOL 105L  Earth History Lab (1) PR: GEOL 101L or GEOL 103L or HONS 155L; CO: GEOL 105

☐ GEOL 252  Mineralogy (4) PR: GEOL 101 and 101L or GEOL 103 and 103L and GEOL 105 and 105L or 105L and 155L and 155L; CHEM 101 and 101L or CHEM 111 and 111L or instructor permission

☐ GEOL 269  Introduction to Petrology (4) PR: GEOL 101 and 101L or GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and 155L; CHEM 101 and 101L or CHEM 111 and 111L; GEOL 252 or instructor permission

☐ GEOL 272  Stratigraphy and Sedimentation (4) PR: GEOL 101 and 101L or GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and 155L; CHEM 101 and 101L or CHEM 111 and 111L; GEOL 252 or instructor permission

☐ GEOL 333  Paleobiology (4) PR: GEOL 101 and 101L or GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and 155L; CHEM 101 and 101L or CHEM 111 and 111L; GEOL 252 or instructor permission

☐ GEOL 352  Structural Geology (4) PR: GEOL 101 and 101L or GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and 155L; CHEM 101 and 101L or CHEM 111 and 111L; GEOL 252 or instructor permission

☐ GEOL 360  Field Studies (4) PR: GEOL 101 and 101L or GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and 155L; CHEM 101 and 101L or CHEM 111 and 111L; GEOL 252, 269, 272, and 352 or instructor permission. Under special circumstances, a student may petition the department to substitute an equivalent field experience.

☐ GEOL 492  Senior Seminar (1) PR: Senior standing as a GEOL major

Select 3 credit hours from the following:

☐ ____________

GEOL 206  Planetary Geology (3) PR: GEOL 101 and 101L or GEOL 103 and 103L or HONS 155 and 155L
GEOL 213  Natural Hazards (3) PR: GEOL 101 and 101L or GEOL 103 and 103L or HONS 155 and 155L
GEOL 235  Geology and Civilization (3) PR: GEOL 101 and 101L or HONS 155 and 155L
GEOL 238  Water Resources (3) PR: GEOL 101 and 101L or GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and 155L and 156L
GEOL 240  Special Topics in Geology (1-4) PR: GEOL 101 and 101L or GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and 155L and 156L; CHEM 101 and 101L or CHEM 111 and 111L; GEOL 252 or instructor permission

Select 6 credit hours from the following with a maximum of 3 credit hours from GEOL 260 and 260L or 460L:

☐ ____________   ☐ ____________
GEOL 257 Marine Geology (4) PR: GEOL 101 and 101L or GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L or instructor permission. Students may not receive credit for both GEOL 107 and 257.

GEOL 260 NASA Space Mission Design (2) PR: GEOL 101 and 101L or GEOL 103 and 103L or HONS 155 and 155L and GEOL 206 or instructor permission; CO: GEOL 260L or GEOL 460L

GEOL 260L NASA Space Mission Design Lab (1) PR: GEOL 206 or instructor permission; CO: GEOL 260

OR

GEOL 460L NASA Space Mission Design Leadership Lab (1) PR: Instructor permission; CO: GEOL 260

GEOL 275 Geomorphology (4) PR: GEOL 101 and 101L or 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 101 and 101L and GEOL 105 and 105L and GEOL 272 or instructor permission

GEOL 314 Introduction to Remote Sensing (4) PR: GEOL 101 and 101L or 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 320 Earth Resources (3) PR: GEOL 101 and 101L or GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and GEOL 252 or instructor permission

GEOL 357 Oceanographic Research–The Transect Program (4) PR: GEOL 101 and 101L or 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 101 and 101L or GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and GEOL 252, 269, 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 101 and 101L or 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 412 Crustal Geophysics (3) PR: GEOL 101 and 101L or 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 Paleocoeology (4) PR: GEOL 101 and 101L or 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 101 and 101L or GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and GEOL 252 and 269 or instructor permission

GEOL 434 Geology of the Carolinas (3) PR: GEOL 101 and 101L or 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 101 and 101L or 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 101 and 101L or GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and GEOL 252 or instructor permission

GEOL 444 Quantitative Hydrogeology (3) PR: GEOL 101 and 101L or 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 101 and 101L or 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 101 and 101L or GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and CHEM 101 and 101L or CHEM 111 and 111L; CO: GEOL 250L
- GEOL 250L Introduction to Geochemistry Lab (0) CO: GEOL 250

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

- PHYS 101 Introductory Physics (3) PR: None; CO or PR: PHYS 101L
- PHYS 101L Introductory Physics Lab (1) CO: PHYS 101L
- 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
- 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
- BIOL 101L Concepts and Applications in Biology I Lab (0) CO: BIOL 101
- BIOL 102 Concepts and Applications in Biology II (4) PR: BIOL 101 and 101 lab; CO: BIOL 102L
- BIOL 102L Concepts and Applications in Biology II Lab (0) CO: BIOL 102

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
- 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
- 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 101 and 101L or 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 101 and 101L or 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 or CHEM 101 and 101L and GEOL 250 or instructor permission

Select 4 credit hours from the following:

GEOL 257  Marine Geology (4) PR: GEOL 101 and 101L or GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L or instructor permission. Students may not receive credit for both GEOL 107 and 257.

GEOL 275  Geomorphology (4) PR: GEOL 101 and 101L or 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 101 and 101L or 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 101 and 101L or 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 101 and 101L or GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and GEOL 252 or instructor permission

GEOL 360  Field Studies (4) PR: GEOL 101 and 101L or GEOL 103 and 103L and GEOL 105 and 105L or HONS 155 and 155L and HONS 156 and 156L and GEOL 252, 269, 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.