

# GEOLOGICAL SCIENCES MINOR

Students majoring in another department may elect to pursue completion of a minor in geology.

## Requirements















In addition to the program requirements listed below, students must:







- take at least nine hours of their minor "core" requirements at UNC-Chapel Hill
- earn a minimum cumulative GPA of 2.000 in the minor core requirements. Some programs may require higher standards for minor or specific courses.

For more information, please consult the degree requirements section of the catalog (<https://catalog.unc.edu/undergraduate/degree-requirements/>).

Code	Title	Hours
<b>Core Requirements</b>		
Four EMES courses from the list of options below. <sup>1</sup>		12
<b>Total Hours</b>		<b>12</b>

<sup>1</sup> Only one course may be numbered less than 200.

Code	Title	Hours
EMES 68	 First-Year Seminar: Soundscape of Our Planet	3
EMES 72H	 First-Year Seminar: Field Geology of Eastern California	3
EMES 76	 First-Year Seminar: Energy Resources for a Hungry Planet	3
EMES 77	 First-Year Seminar: Volcanoes and Civilization: An Uneasy Coexistence	3
EMES 79	 First-Year Seminar: Coasts in Crisis	3
EMES 89	 First-Year Seminar: Special Topics <sup>1</sup>	3
EMES 101 & 101L	 Planet Earth and  Planet Earth Laboratory <sup>F</sup>	4
EMES 103 & 103L	 The Marine Environment and  The Marine Environment Laboratory	4
EMES 200	 The Solid Earth	3
EMES 201	 Earth's Surface: Processes, Landforms, and History	3
EMES 203	 Data Analysis for Earth, Marine, and Environmental Sciences	3
EMES 221	Geology of North America	3
EMES 301	Earth Materials: Minerals	4
EMES 302	Structural Geology	4
EMES 303	Sedimentology and Stratigraphy	4
EMES 304	Petrology and Plate Tectonics	4
EMES 305	Planetary Geology: Meteorites and Asteroids	3
EMES 306	 Earth Systems History	3

EMES 310	Coastal Environmental Change	3
EMES 314	 Earth Systems in a Changing World	3
EMES 324 & 324L	 Water in Our World: Introduction to Hydrologic Science and Environmental Problems and  Water in Our World Laboratory	4
EMES 395 or EMES 396	 Undergraduate Research in Earth, Marine, and Environmental Sciences <sup>2</sup> Independent Study in Earth, Marine, and Environmental Sciences	1-3
EMES 405	 Geochemistry	3
EMES 406	Introduction to Geophysics	3
EMES 412	 Principles and Methods of Teaching Earth Science	4
EMES 414/ ENEC 514	Flood Hydrology: Models and Data Analysis	3
EMES/ENEC 417	Surface Processes and Landscape Evolution	4
EMES/ANTH 421	Archaeological Geology	3
EMES 425	Introduction to Field Geology	3
EMES 431	Major World Rivers and Global Change: From Mountains to the Sea	3
EMES 432	Paleoclimatology	3
EMES/ENEC 435	Principles of Environmental Consulting: Mechanics of Groundwater Flow	3
EMES 436	Geochemistry of Natural Waters	3
EMES 438	Principles of Seismology	3
EMES 483	Geologic and Oceanographic Applications of Geographical Information Systems	4
EMES 485	Summer Field Course in Geology	3
EMES 486	Summer Field Course in Geology	3
EMES 501	Geological Research Techniques	3
EMES 504	Advanced Petrology	3
EMES 508	Global Hydrology	3
EMES/ENEC 511	Stable Isotopes in the Environment	3
EMES/ENEC 512	Advanced Coastal Environmental Change	3
EMES 520	Data Analysis in the Earth Sciences	3
EMES 525	Inverse Theory: Advanced Data Analysis and Geophysical Modeling	3
EMES 567	Application of Plasma Mass Spectrometry in Earth and Environmental Sciences	3
EMES 580	Evolution of Earth's Surface Environment	3
EMES 608	Continuum Mechanics in the Earth Sciences	3
EMES 655	Recent Advances in Non-Traditional Stable Isotope Geochemistry	3
GEOG 440/ GEOL 502	Earth Surface Processes	3

<sup>F</sup> FY-Launch class sections may be available. A FY-Launch section fulfills the same requirements as a standard section of that course, but also fulfills the FY-SEMINAR/FY-LAUNCH First-Year Foundations requirement. Students can search for FY-Launch sections in ConnectCarolina using the FY-LAUNCH attribute.

<sup>1</sup> With permission, based on topic.

<sup>2</sup> Student must register for a minimum of 3 credit hours. No more than 3 credit hours may apply towards the minor.

See the program page here (<https://catalog.unc.edu/undergraduate/programs-study/geological-sciences-major-ba-earth-science-concentration/>) for special opportunities.

## Department Programs

### Majors

- Geological Sciences Major, B.A.–Earth Science (<https://catalog.unc.edu/undergraduate/programs-study/geological-sciences-major-ba-earth-science-concentration/>)
- Earth and Marine Sciences Major, B.S. (<https://catalog.unc.edu/undergraduate/programs-study/earth-marine-sciences-major-bs/>)

### Minors

- Environmental Microbiology Minor (<https://catalog.unc.edu/undergraduate/programs-study/environmental-microbiology-minor/>)
- Geological Sciences Minor (p. 1)
- Marine Sciences Minor (<https://catalog.unc.edu/undergraduate/programs-study/marine-sciences-minor/>)

### Graduate Programs

- M.S. in Geological Sciences (<https://catalog.unc.edu/graduate/schools-departments/geological-sciences/>)
- M.S. in Marine Sciences (<https://catalog.unc.edu/graduate/schools-departments/marine-sciences/>)
- Ph.D. in Geological Sciences (<https://catalog.unc.edu/graduate/schools-departments/geological-sciences/>)
- Ph.D. in Marine Sciences (<https://catalog.unc.edu/graduate/schools-departments/marine-sciences/>) (<https://catalog.unc.edu/graduate/schools-departments/geological-sciences/>)

## Contact Information

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Visit Program Website (<https://emes.unc.edu/>)

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