Earth Science
College of Social & Behavioral Sciences
Department of Geography
7 Armstrong Hall • 507-389-2617
Web site: www.mnsu.edu/dept/geog
www.mnsu.edu/dept/geol
Director: Donald Friend, Ph.D.

Earth studies the Earth's interrelated physical systems of atmosphere, biosphere, geosphere, hydrosphere, and outer space. Fundamental to Earth Science are the impacts of people and the interactions of chemical, physical, and biological processes at all spatial scales ranging from submicroscopic to planetary, and over time scales from the immediate to billions of years. Thus, courses in Astronomy, Biology, Chemistry, Geography, Geology, and Physics are required to fulfill degree requirements. Majors may choose to earn the BA or BS and there are options for teacher licensure in the "Science Teaching: Earth Science" program. An Earth Science minor is available.

Admission to Major is granted by the department. Minimum university admission requirements are:
- a minimum of 32 earned semester credit hours.
- a minimum cumulative GPA of 2.00 (C).
Contact the department for application procedures.

EARTH SCIENCE BA, BS

Required for Major (Core, 43 credits):
AST 101 Introduction to Astronomy (3)
AST 102 Introduction to the Planets (3)
BIOL 100 Our Natural World (4)
CHEM 201 General Chemistry I (5)
GEOG 101 Introduction to Physical Geography (3)
GEOG 217 Weather (3)
GEOG 315 Geomorphology (3)
GEOG 410 Climatic Environments (3)
GEOL 121 Physical Geology (4)
GEOL 122 Earth History (4)
GEOL 201 Elements of Mineralogy (4)
PHYS 211 Principles of Physics I (4)

Required Electives for Major (6 credits):
Choose six credits from the following:
AST 125 Observational Astronomy (3)
BIOL 432 Lake Ecology (4)
GEOG 370 Cartographic Techniques (4)
GEOG 373 Introduction to Geographic Information Systems (4)
GEOG 412 Advanced Weather (4)
GEOG 420 Conservation of Natural Resources (3)
GEOG 440 Field Studies: Colorado
GEOG 440 Field Studies: Field Methods
GEOG 480 Seminar (1-4)
GEOL 270 Structural Geology (4)
GEOL 350 Environmental Geology (4)
GEOL 370 Geotectonics (2)
GEOL 450 Hydrogeology (3)

Required for Bachelor of Arts (BA) degree ONLY:
Language (8)

Minor Required: None.

EARTH SCIENCE BS TEACHING (5-12)

Requirements for the Earth Science, Teaching major can be found in the SCIENCE TEACHING section of this bulletin.

EARTH SCIENCE MINOR

Required General Education for Minor (17 credits):

AST 101 Introduction to Astronomy (3)
PHYS 100 Cultural Physics (3)
CHEM 100 Chemistry in Society (4)
BIOL 100 Our Natural World (4)
GEOG 101 Introduction to Physical Geography (3)

Required for Minor (Core, 14 credits):
GEOL 121 Physical Geology (4)
GEOL 122 Earth History (4)
GEOG 217 Weather (3)
GEOG 315 Geomorphology (3)

Required Electives for Minor (3 credits):
Choose one from the following:
AST 102 Introduction to the Planets (3)
GEOG 410 Climatic Environments (3)
GEOG 420 Conservation of Natural Resources (3)

POLICIES/INFORMATION

GPA Policy. A GPA of 2.0 or higher in a major or minor is required for graduation.
Refer to the College regarding required advising for students on academic probation.
P/N Grading Policy. All courses in earth science must be taken for a letter grade.