

Through a comprehensive hydrology curriculum and through their own research, students enrolled in the Hydrology Program focus on all aspects of hydrology and the water cycle, from atmospheric processes to surface water to groundwater hydrogeology. Examples include hydraulics, hydroclimatology, mathematical modeling of surface and groundwater, hydrometeorology, and contaminant transport within water.

Current investigations involve sites throughout the world and include basic research into the nature of water movement, aquifers, and chemical transport over and beneath land surfaces using laboratory, field, and computer techniques. One area of active research is on the Rio Grande, which flows through the center of New Mexico.



The Rio Grande Valley provides many opportunities to conduct research in hydrology.

Job Opportunities

Geoscience professionals are commonly employed in high-paying applied, research, and teaching jobs that address important issues facing society. Such issues include water resources, environmental challenges, energy production and management, and geologically-associated hazards. Employers of NMT graduates include the U.S. Geological Survey, U.S. National Laboratories, research and/or teaching universities, and numerous energy, geologic, and environmental companies in the private sector.

About NMT

New Mexico Tech (officially New Mexico Institute of Mining and Technology) was founded in 1889 as the New Mexico School of Mines. Over the years, NMT has become an outstanding research university and is a world leader in many areas of research, including the geosciences.

New Mexico Tech was ranked as the second-best college value in the United States in the Princeton Review's 2006 edition of *America's Best Value Colleges* for its outstanding academics and low cost.



The Mineral Science and Engineering Complex (MSEC) is home to the Earth and Environmental Science Department.

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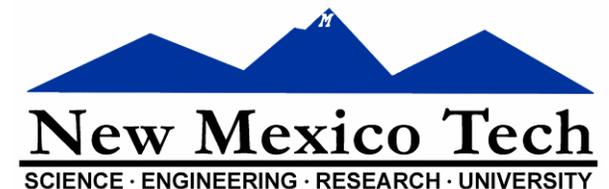
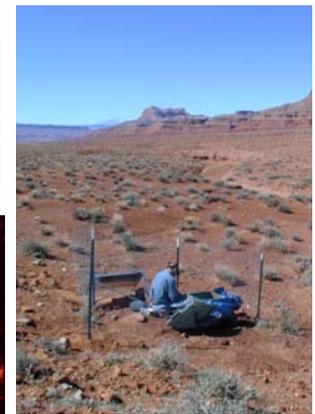
EES Website www.ees.nmt.edu

NMT Website www.nmt.edu

PASSCAL website www.passcal.nmt.edu

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Earth and Environmental Science



About the Department

The Department of Earth and Environmental Science (EES) consists of three geoscience programs: Geology/Geochemistry, Geophysics, and Hydrology.

The following degrees are offered by EES:

- BS in Earth Science with options in Geology, Environmental Geology, Geochemistry, or Geophysics
- BS in Environmental Science with options in Biology, Chemistry, Geology, Hydrology, or Instrumentation and Measurements
- MS in Geochemistry, Geology, Geophysics, or Hydrology
- PhD in Earth and Environmental Science with Dissertation in Geochemistry, Geology, Geophysics, or Hydrology

The department has 22 faculty and 29 adjunct faculty who are actively involved in research and/or teaching. EES faculty bring in over \$5 million in funding per year for current and new research projects.

The department has about 50 undergraduate and 70 graduate students who actively participate in this research-oriented department. The low student-to-faculty ratio ensures small class sizes and one-on-one interaction between faculty and students.

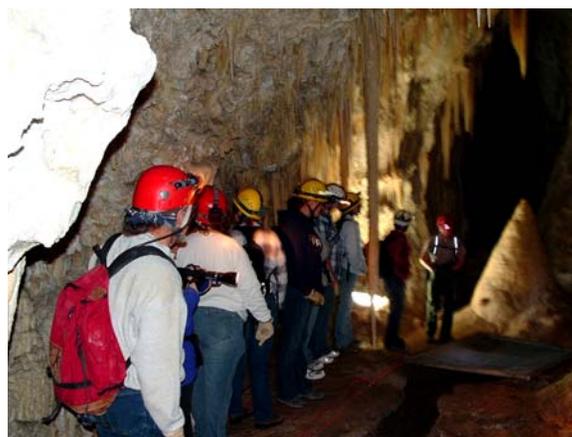
Undergraduate degrees in geoscience require a broad-based background in mathematics, chemistry, and physics, as well as basic training in geoscience.

Geology/Geochemistry Program

Geology is the study of the materials that make up the planet Earth, the processes that act upon these materials, and the history of our planet and its life forms. Geochemistry is the application of

chemistry to geological problems, such as using trace elements to decipher the origin of rocks, measuring radiogenic elements and compositions to determine the age of rocks, or quantifying the natural sources of arsenic in groundwater.

Undergraduates enrolled in the Geology/Geochemistry Program get a good grounding in geology before moving on to specialized classes in fields such as environmental and sedimentary geology, ore deposits, geomorphology, volcanology, and cave and karst science.



Students exploring the Lower Cave of Carlsbad Caverns in southeastern New Mexico.

Geophysics Program

The Geophysics Program focuses on physical processes within the solid Earth that cause phenomena such as volcanoes, earthquakes, and tectonic deformation. Active research interests of the program include seismic imaging of the Earth's interior, rock physics, marine geophysics, oceanic drilling, tsunamis, volcanoes, and earthquakes.

Students enrolled in the Geophysics Program learn how to collect, analyze, and synthesize diverse information to understand Earth structure and processes at size scales ranging



Geophysics student analyzing seismic data on a workstation.

from local to global. Geophysics involves using large data sets and applying sophisticated computer and mathematical techniques to solve problems.

The Geophysics Program manages three research seismic networks (two located in New Mexico and one on Mount Erebus Volcano, Antarctica) and several dedicated geophysics laboratories. The program hosts the National Science Foundation's IRIS PASSCAL Instrument Center and EarthScope USArray Array Operations Facility, which support world-class instrumentation-based efforts dedicated to advancing United States and international seismology.

Hydrology Program

Hydrology is an interdisciplinary science that combines principles of engineering, geology, mathematics, physics, and chemistry and applies them to varied water problems.

The Hydrology Program was founded in 1956 by Mahdi Hantush, one of the fathers of modern well hydraulics. It is one of the oldest and largest hydrology programs in the United States, and *U.S. News and World Report* ranks it fourth in the nation.