EARTH SCIENCES

"An understanding of natural Earth systems has never been more critical to the health and sustainability of our planet. We offer programs of distinction that excite, faculty that inspire, and opportunities that will challenge you and help you build skill sets that are aligned with workforce demand. We welcome you to join us."

– Richard D. Clark, Department Chairperson

The Department of Earth Sciences provides an enlightening environment for learning, with a contemporary curriculum in each of five disciplines, tuned to workforce demand and augmented by opportunities for research, independent study and internships.

Mission Statement – The mission of the Department of Earth Sciences is to provide a rich, authentic and challenging learning experience in the areas of geology, meteorology, ocean science and coastal studies, earth science education and general earth sciences, for every student, both major and nonmajor. We strive to achieve this through enlightened and comprehensive curricula, modern facilities and equipment, meaningful opportunities for students to engage in extracurricular activities, and by attentiveness to inter- and cross-disciplinary trends and opportunities for student engagement.

Vision Statement – Provide a learning experience in the earth sciences that is second to none.

DEGREES/CONCENTRATIONS

BACHELOR OF SCIENCE (B.S.)

Geology – An excellent foundation in the physical structure and substance of the earth, its history and the processes that act on it. The geology program offers small class sizes, hands-on learning opportunities, field study and research experiences. Students earning a B.S. in geology exceed requirements for professional geology licensure and are prepared for entry into either the workforce or graduate school.

Meteorology – A nationally recognized program offering deep and broad immersion in the atmospheric sciences. The degree meets the American Meteorological Society guidelines for an undergraduate degree in atmospheric science and the GS-1340 civil service requirements, allowing graduates to select from the wide spectrum of job opportunities or graduate programs available across the weather and climate enterprise.

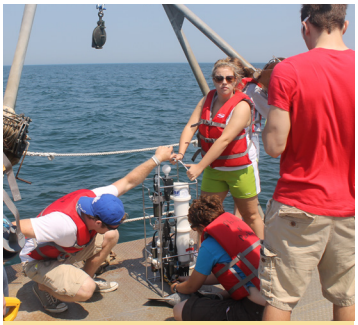
Ocean Sciences and Coastal Studies – This program provides students with a rich and comprehensive exposure to the ocean's physical dynamics and complex ecosystems. The option in physical oceanography further emphasizes the ocean's role in global climate change and ocean-atmosphere interactions. The OSCS program offers significant field and research experiences (for example, at the Chincoteague Bay Field Station, http://www.cbfieldstation.org/) and is designed to prepare students for graduate school and jobs in the private and public sectors.

Left: *Millersville meteorology students study air pollution in Texas.* ***Top right:*** *Millersville ocean sciences students depart for the Chesapeake Bay onboard a research vessel.* ***Bottom right:*** *The geology club in Utah.*

Earth Sciences Education – This program is for students interested in pursuing careers as middle school or high school educators in the field of earth sciences. Students obtain certification in earth and space science upon completion of the program. Education courses and student-teaching experiences are offered in conjunction with the College of Education and Human Services.

BACHELOR OF ARTS (B.A.)

Earth Sciences with an Environmental Geology Option – Multidisciplinary in design, students in this program are exposed to the foundations of the processes that influence the earth, atmosphere and oceans. The environmental geology option is for students who want to delve more deeply into an applied science concerned with the practical application of the principles of geology in the solving of environmental problems.



Research and education at the Chincoteague Bay Field Station.

Geology club explores glaciers during a field trip to Alaska.

Geology field trips – a real pathway to learning.

Meteorology students participate in a study of winter lake-effect snow events.

The Department of Earth Sciences has sustained solid growth since its founding. Each student follows a contemporary and comprehensive curriculum that reflects long-term trends in the scientific disciplines, while moving toward a more holistic, integrated earth systems approach so that our graduates gain the credentials needed to serve science and society in the 21st century. The department will remain dedicated to creating authentic learning experiences for students by exposing them to the latest scientific equipment and technology, both in the classroom and in research settings.

In-house Undergraduate Research – The opportunity to conduct undergraduate research is one of the many highlights of the department's programs. Students have been involved in research projects funded by the National Science Foundation, NASA and the Department of Defense, to name a few.

Opportunities Beyond Millersville – Every department student is encouraged to pursue an internship experience outside the department. Internships are often life-changing experiences. The department's track record in placing its students into highly competitive internships is outstanding.

FACILITIES

Students enrolled in any one of the department's programs have ready access to research-grade equipment and modern facilities, including technology-infused classrooms and laboratories, routinely upgraded computers and servers, and sophisticated software and visualization applications.

FACULTY

All 10 full-time faculty have earned their doctoral degrees. Together, they reflect a diversity of expertise that covers the various disciplines of earth sciences.

Meteorology students study nocturnal thunderstorms and other nighttime weather phenomena in Kansas. What do you want to do as an undergraduate?

CLUBS AND ACTIVITIES

American Meteorological Society, Millersville Chapter – A full-service local student chapter, its mission is the same as that of the American Meteorological Society: to promote the development and dissemination of information and education on the atmospheric and related oceanic and hydrologic sciences, and the advancement of their professional applications.

Campus Weather Service – A student-run forecast service that issues forecasts several times daily for the local community.

Geology Club – This club affords opportunities for students to become better acquainted, to promote interest in geology and the earth sciences, and to provide opportunities beyond the classroom to explore geology. Highlights of the club include mineral and fossil digging, trips to regional natural history museums and the annual club trip to a national park.

Ocean Science Club – Through the study of marine biology, oceanography and marine ecology (and their individual disciplines), club members are provided with a casual, insightful and inspiring learning atmosphere. The club actively and responsibly provides educational experiences, informational lectures and career exploration opportunities for its members.

Mike Charnick (Meteorology, 2014) studies weather in a research aircraft. Excellent research opportunities abound.

ABOUT OUR GRADUATES

Graduates of the Department of Earth Sciences do extremely well, no matter what path they take after Millersville, be it graduate school, the private sector, the military or as civil servants. Many of the department's graduates comment that their educational experiences at Millersville provided superior preparation compared to their peers at other institutions.

Millersville University

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