GEO 1  THE DYNAMIC EARTH

Prof. Anne Gardulski
Lecture  E block: MWF  10:30-11:20 AM  Lane 100
Lab sections:  select from MWTThF  1:20-4:20  Lane 6

When viewed from space, Earth is a beautiful blue sphere - a single, unique closed system. With global interest in sustainability and climate change, it makes sense to understand the processes and systems that have formed and shaped our planet - the geologic basis of all the water, soil, mineral, and energy resources that humans depend on.

We will study the rock and mineral materials that comprise our Earth, how they are put together from the crust down to the core, and how natural processes continually modify the Earth over vast time spans. We will examine how and why events like earthquakes and volcanic eruptions occur, and where natural resources like metals, hydrocarbons, and building stone come from.

For 10 weeks of the semester, students will gather in lab sections to explore some of the lecture concepts in a more hands-on format. In 6 of these lab meetings, we will go on local field trips, so that by the end of the semester students will have an appreciation for the geology of eastern Massachusetts, where they are spending 4 years of their lives! The labs are required, but there are no write-ups or reports to turn in - we want students to observe, ask questions, and learn by experience.

Grades are based on 3 exams including a final, lab participation, and several in-class ‘thought questions’. This course satisfies one credit of the Natural Science distribution.
INTRODUCTION TO OCEANOGRAPHY

Prof. Anne Gardulski
D+ block: Tuesday, Thursday 10:30-11:45 AM Lane 100

The vastness and depths of the oceans have intrigued and challenged people for thousands of years. It has been a transportation highway, a barrier, and an important food source which is being threatened by over-exploitation and pollution. We have come to realize that the oceans are a critical link in Earth’s atmospheric, climatic, and ecologic structures, and the world is learning of the ocean’s power as tectonic events trigger massive tsunamis.

This course is an exploration of “how the ocean works” - its physical systems like currents, waves, and tides; its chemical importance as a stable world for myriad species to live and as a heat stabilizer for our planet; and its biological systems that are so starkly different near the sea surface compared to the ocean’s enormous depths. We will also examine the geological context for the shapes and sizes of our oceans, and the coastal environments along the margins. Human impacts and the significance of the world ocean on Earth’s climate are timely topics about interconnections of land, the sea, and people.

There will be a midterm, final, and 6 homework assignments in addition to readings from the textbook. This course satisfies one credit of Natural Science distribution.

And think ahead to Spring semester!

ENVIRONMENTAL GEOLOGY

Environmental Geology is an introduction to the processes that shape and modify Earth’s surface. Modern surficial processes strongly influence humans and their ability and live and interact with their surroundings. They also provide evidence for interpreting the recent as well as ancient geologic past, and to predict the changes we can expect Earth to undergo in the future. Topics covered include groundwater and the hydrologic cycle, glacial systems, sedimentary environments, and climate environments. Coastal processes, sea level changes, Earth history of the world ocean and climate are examined in this course. Also considered are weathering and erosion, landslides, river dynamics, and arid to cold climate environments.

This course meets for 3 lectures per week, plus one lab meeting for 10 of the 13 weeks of the semester. The lab structure is very similar to Geo1, where attendance is required but lab write-ups are not assigned. Geo 2 also satisfies one credit of Natural Science distribution.

Consider any or all of these courses for First-Year students!

For more information, contact Prof. Anne Gardulski, Chair at x72891 or anne.gardulski@tufts.edu, or see our website at http://geology.tufts.edu