Wanda J. Taylor

Professor of Geology

Ph.D. - University of Utah: 1989

Dr. Taylor became interested in geology at an early age because she grew up in a family that performed several outdoor activities, including hiking and camping. In 1982, Dr. Taylor received a B.S. in geology and a minor in chemistry from University of Minnesota, Duluth. In 1984, she received a M.S. in structural geology from Syracuse University, and later a Ph.D. in structural geology and tectonics from the University of Utah in 1989. She became a faculty member at UNLV in 1991 and teaches a variety of courses, including structural geology, field geology, and natural disasters. Dr. Taylor's research projects are in regional tectonics, faulting, and faulting processes. She uses the absolute and relative timing of deformation, fault geometries, and fault kinematics to develop models of faulting and regional tectonics.

Courses:

GEOL 100 - Natural Disasters

Causes of natural disasters and their impact on people and property. Focuses on geological hazards such as earthquakes, volcanic eruptions, landslides, and floods.

GEOL 341 - Structural Geology

Study of structural features of the earth's crust and their development. Laboratory work involves study and preparation of geologic maps and cross sections as well as structural analysis techniques.

GEOL 348 - Field Geology I

Basic tools and techniques of geologic mapping, map preparation, and report writing.

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GEOL 370 - Intermediate Field Geology

Intermediate-level techniques of geologic mapping, map preparation, and report writing. Preparation of reports includes professional maps, structure sections, and geologically reasonable interpretations. Requires three-week commitment during winter break.

GEOL 372 - Advanced Field Geology

Advanced field techniques including analysis of geologically complex areas; independent and collaborative field projects, and preparation of professional maps and reports. Oral presentation of projects. Requires three-week commitment after spring semester.

GEOL 444 - Tectonics of Orogenic Belts

Study of crustal deformation and the creation of mountain belts around the world. Emphasis on the comparative structural development of different regions around the globe within the context of plate tectonics.

GEOL 496 - Advanced Topics in Geoscience

Variety of advanced studies of current and/or topical interest in specialized areas of geoscience.

Plate Tectonics and Structural Geology:

Plate tectonics is a theory that describes the movement and recycling of the Earth's crust. The crust, or lithosphere, forms the outermost layer of the Earth and is broken up into massive plates that move along the outside of our planet. Layers deep beneath the lithosphere make up the molten core of the Earth. The movement of the crust is driven by geological activity within earth that causes the production of new crust and deposition of formed crust back into the molten layers of rock beneath. Interactions between plates are responsible for several geological phenomena, such as volcanoes,

earthquakes, mountains, and continental drift.. The theory of plate tectonics and continental drift are still subject to debate although widely accepted. Faults created by the movement of massive pieces of earth and plates are often studied through models and the application of structural geology.

Structural geology is the study of the size, character, and distribution of rock in order to understand the processes that have shaped today's land masses and uncover past geological events. History of geologic stresses and occurrences of geological events, such as earthquakes and mountain building, are recorded in the distribution and deformation of rock .Computer simulations and models allow structural geologists to study the three-dimensional distributions of rock and create digital maps more easily in recent years. Understanding past strains, structural differences, and deformational patterns allow scientists to decipher the geochronology of a particular area and sometimes even predict important geological events, such as earthquakes and volcano eruptions. The application of structural geology may also be used to analyze faults or predict potential oil or mineral deposit sites, thus making the field of geology lucrative to the mining and oil industries. This creates careers for geologist involving remediation and the discovery and gathering of mineral, ore, and oil deposits.

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