

المحاضرة الرابعة / المرحلة الثالثة / قسم الجغرافيا
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Geodesy also named geodetics, a branch of earth sciences, is the scientific discipline that deals with the measurement and representation of the Earth, including its gravitational field, in a three-dimensional time-varying space. Geodesists also study geodynamical phenomena such as crustal motion, tides, and polar motion. For this they design global and national control networks, using space and terrestrial techniques while relying on datums and coordinate systems.

Environmental resource management is “a purposeful activity with the goal to maintain and improve the state of an environmental resource affected by human activities” . It is not, as the phrase suggests, the management of the environment as such, but rather the management of the interaction and impact of human societies on the environment. Environmental resources management aims to ensure that ecosystem services are protected and maintained for equitable use by future human generations, and also, maintain ecosystem integrity as an end in itself by taking into consideration ethical, economic, and scientific (ecological) variables. Environmental resource management tries to identify the factors that have a stake in the conflicts that may rise between meeting the needs and protecting the resources.

Glaciology (from Middle French dialect (Franco-Provençal): glace, "ice"; or Latin: glacies, "frost, ice"; and Greek: λόγος, logos, "speech" lit. "study of ice") is the study

of glaciers, or more generally ice and natural phenomena that involve ice.

Glaciology is an interdisciplinary earth science that integrates geophysics, geology, physical geography, geomorphology, climatology, meteorology, hydrology, biology, and ecology. The impact of glaciers on people includes the fields of human geography and anthropology. The discoveries of water ice on the Moon, Mars and Europa add an extraterrestrial component to the field, as in "astroglaciology".

Quaternary science is an inter-disciplinary field of study focusing on the Quaternary period, which encompasses the last 2.6 million years. The field studies the last ice age and the recent interstadial the Holocene and uses proxy evidence to reconstruct the past environments during this period to infer the climatic and environmental changes that have occurred.