

Soils, Slopes and the Environment

ENVS238

This course introduces students to pure and applied soil science and addresses the following themes:

- a. Introduction: Why is soil science important? A brief history of soil use and misuse. Soil is a precious and easily damaged resource.
- b. The components of soil: mineral fraction; organic matter; water and air.
- c. Pedogenic processes (e.g. leaching, gleying and laterization); factors affecting soil formation (i.e. climate, parental materials, relief, organisms and time).
- d. Soil Profiles: the development of soil profiles; profile nomenclature; 'classic' profiles.
- e. Soil Classification: a history of soil classification; the 'zonal concept'; the 1938 USDA soil classification and the development of the USDA, FAO-UNESCO and Soil Survey of England and Wales Schemes over the last 70 years.
- f. The Impact of Human Activities on Soils: the extent of soil erosion, processes and rates of erosion; the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE); changes in salinity, laterization, podzolization, acidification, carbon, structure and drainage.
- g. Soil erosion control: controlling erosion by water and wind including case study material from the Mediterranean lands, the USA and the UK.
- h. Soil and World Food Supply: production of food on different types of soil; problems of, and opportunities for, cropping tropical soils and issues raised by shifting cultivation.

This course is designed to appeal to students interested in development and environmental geography, as well as more specialized physical geographers. Assessment involves a mixture of a written examination and a course essay.

