

PRINCIPAL SUBJECT AREA

GEOLOGY

100 LEVEL COURSES

GL 101 Earth Processes (3 credits)

Introduction to Geology. The universe, the solar system and the earth. Structure of the Earth. Earth's atmosphere, biosphere, hydrosphere and lithosphere, their origin and evolution. Processes shaping the earth; the agents (rivers, oceans, glaciers and wind), their actions (weathering, soil formation, erosion, transportation, mass movements and deposition) and the landforms. Study of Earth's internal processes: earthquakes, volcanism, plutonism, deformation, orogenesis and metamorphism, and their cause in the light of Plate Tectonics. Timescale of geological processes. Geological Time Scale. Laws of Uniformitarianism and Superposition. Criteria to determine top and bottom of layered sequences. Unconformities. Unravelling the past: relative and absolute dating, Geological history of Sri Lanka.

Recommended texts:

1. Press, Frank and Siever, Edmund (1994) *Earth*
2. Summierfield, M.A. *Global Geomorphology*
3. Moore, R.B., Lalicker, C.G. and Fishers, A.G. *Invertebrate fossils*
4. Nileds and Tucker, V.C.T. *Palaeontology-An Introduction*
5. Ross, Kenneth P. *Geochronology*,

GL 102 Earth Processes Practical (1 credit)

(Prerequisite: GL 101)

Study and interpretation of topographic, orographic, geological, agricultural and land-use maps and cross-sections. Introduction to geological mapping and 10-15 days of geological mapping exercise.

GL 103 Earth Materials (3 credits)

Common crystal forms, habits and twinning. Their Point Group symmetry and classification into crystal systems and classes. Bravais lattices. Introduction to common rock-forming minerals, their composition, physico-chemical properties, classification and identification. Economic minerals, their composition, physico-chemical properties and identification. Introduction to igneous, sedimentary and metamorphic rocks, their classification, mineralogy and texture, and identification. Introduction to rocks of Sri Lanka. Introduction to fossils. Fossils, their preservation and interpretation. Study of common fossil forms in the Precambrian and Phanerozoic, their identification and biostratigraphy.

Recommended texts:

1. Cornelis Klein Cornelius S. Hurlbut (1993) *Manual of Mineralogy*(21st Edition)
2. Blackburn, William H. and Dennen, William H. (1988). *Principles of Mineralogy*
3. Ford, W.E. (1964). *A text book of Mineralogy*, 4th Edition revised and enlarged

GL 104 Earth Materials Practical (1 credit)

(Prerequisite: GL 103)

Identification of common crystal forms, habits and twinning. Their Point group symmetry and classification into classes and systems. Identification of common rock-forming minerals, economic minerals on the basis of physico-chemical properties. Study of mineralogy and texture of igneous, sedimentary and metamorphic rocks. Identification of common fossil forms.