Semester:	1		
Course Code:	ENCM 11713		
Course Name:	Basic Geology and Soil Science		
Credit Value:	3		
Status	Compulsory		
Pre-requisites	GCE A/L Biology		
Co-requisites	None		
Hourly Breakdown	Theory	Practical	Independent Learning
	30	45	75

Intended Learning Outcomes:

After completion of this course unit, the student will be able to;

1. describe types of rocks and mineral resources and their economic importance,
2. describe the fundamental geological concepts in relation to geological timescale,
3. explain interactions between humans and the geological environment,
4. describe geomorphological concepts in landscape development and the soil formation process,
5. demonstrate competencies in characterizing soil,
6. estimate soil erosion and suggest appropriate soil conservation measures, and
7. describe geomorphology and groundwater distribution of Sri Lanka.

Course Content:

Introduction to geology and Sub divisions of geology; Geological time scale; Introduction to minerals and characteristics of minerals; Economically important mineral resources in Sri Lanka; Introduction to rocks; Classification of rocks; Economically important rock resources in Sri Lanka; Exogenic versus endogenic geologic processes; Processes of soil formation; Soil types;

Soil profile development; Soil erosion; Geologic map of Sri Lanka; Formation of landforms: Actions of rivers, glaciers, wind and waves, Mass movements of landforms; Occurrence and movement of groundwater; Groundwater aquifers of Sri Lanka; Geology and Geomorphology of Sri Lanka; Interactions between humans and their geological environment; Physical, biological and chemical characteristics and properties of soil; Soil textural classification.

Laboratory and field sessions on; Identification and characterization of rocks and minerals of Sri Lanka, Geologic map of Sri Lanka; Soil sampling and sampling equipment; Soil profile, soil color; soil moisture and moisture factor; Soil texture determination by different methods; Soil particle density, soil bulk density and porosity; Soil pH, EC, CEC, Organic matter content, Soil fertility.

Teaching /Learning Methods:

A combination of lectures, laboratory and field practical sessions, computer-based learning, self-studies, field-based assignments and small group discussions.

Assessment Strategy: Continuous assessment and end of semester examination. Percentage given for each sub component indicates the percent contribution to the final marks.

Continuous Assessment 20 %	Final Assessment 80 %		
Details:	Theory	Practical	Other
Assignments 10	60	20	-

Practical reports 10			

Recommended Readings:

1. Brady, N. C. & R. R. Weil (2017). The Nature and Properties of Soils. 15th Edition, Prentice Hall.
2. Dubey, S.K. & A. Arora (2017). A Practical Book on Soil, Plant, Water and Fertilizer Analysis. 2nd Edition, S.R. Scientific, India.
3. Geological Atlas of Sri Lanka.
4. Morgan, R.P.C (2005). Soil Erosion and Conservation. 2nd Edition, Wiley-Blackwell.
5. NSF (2018). Natural Resources of Sri Lanka: conditions, trends and prospects. 3rd Edition, National Science Foundation of Sri Lanka
6. Sarkar, D. & A. Haldar (2010). Physical and Chemical Methods in Soil Analysis.New Age International Pvt. Ltd.