Module code	SG-4314			
Module Title	Engineering Geology			
Degree/Diploma	Bachelor of Science (Geology)			
Type of Module	Major Option			
Modular Credits	4	**Total student Workload**	10	hours/week
		Contact hours	4	hours/week
Prerequisite	None			
Anti-requisite	None			

Aims

This module comprises a link between Geologists and Engineers and it is designed to introduce students to the applications of Geological Sciences to Civil and Mining Engineering studies. It aims at providing all necessary knowledge to recognise and explore the geological factors that may account for the design, operation and maintenance of a surface or underground structures, as well as to propose effective solutions to geo-environmental problems.

Learning Outcomes

On successful completion of this module, a student will be expected to be able to:

Lower order :	30%	- understand the geological factors that affect engineering constructions - recognise and report failures related to geological conditions - understand how human impacts affect the geological environment
Middle order :	50%	- assess geological conditions for engineering purposes - collect and organise data for constructions and environmental problems - identify the causes of failures and to define future measures for protection - design experiments for the evaluation of the behaviour of the ground
Higher order:	20%	- recommend solutions for pertinent environmental problems - design basic site investigations and advise professionals or organisations - contribute to the design of public works

Module Contents

- Engineering description of soils and rocks and factors affecting their strength behaviour
- Mohr's circle, rock mass and soil mass classification, geotechnical mapping
- Application of geosynthetics to the geotechnical engineering industry
- Effective stress and shear strength behaviour of soils
- Site investigation, stages, design, implementation, tests, drilling and sampling techniques
- Geotechnical conditions in surface and underground constructions

Assessment	Formative assessment	Practical tests, assignments and feedback
	Summative assessment	Examination: 50%
		Coursework: 50% - 1 class test (20%) - 2 group projects with presentation (30%)