

<b>Module code</b>	SG-4314		
<b>Module Title</b>	Engineering Geology		
<b>Degree/Diploma</b>	Bachelor of Science (Geology)		
<b>Type of Module</b>	Major Option		
<b>Modular Credits</b>	4	<b>Total student Workload</b>	10 hours/week
		<b>Contact hours</b>	4 hours/week
<b>Prerequisite</b>	None		
<b>Anti-requisite</b>	None		
<b>Aims</b>			
<p>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.</p>			
<b>Learning Outcomes</b>			
<i>On successful completion of this module, a student will be expected to be able to:</i>			
Lower order :	30%	<ul style="list-style-type: none"> <li>- understand the geological factors that affect engineering constructions</li> <li>- recognise and report failures related to geological conditions</li> <li>- understand how human impacts affect the geological environment</li> </ul>	
Middle order :	50%	<ul style="list-style-type: none"> <li>- assess geological conditions for engineering purposes</li> <li>- collect and organise data for constructions and environmental problems</li> <li>- identify the causes of failures and to define future measures for protection</li> <li>- design experiments for the evaluation of the behaviour of the ground</li> </ul>	
Higher order:	20%	<ul style="list-style-type: none"> <li>- recommend solutions for pertinent environmental problems</li> <li>- design basic site investigations and advise professionals or organisations</li> <li>- contribute to the design of public works</li> </ul>	
<b>Module Contents</b>			
<ul style="list-style-type: none"> <li>- Engineering description of soils and rocks and factors affecting their strength behaviour</li> <li>- Mohr's circle, rock mass and soil mass classification, geotechnical mapping</li> <li>- Application of geosynthetics to the geotechnical engineering industry</li> <li>- Effective stress and shear strength behaviour of soils</li> <li>- Site investigation, stages, design, implementation, tests, drilling and sampling techniques</li> <li>- Geotechnical conditions in surface and underground constructions</li> </ul>			
<b>Assessment</b>	Formative assessment	Practical tests, assignments and feedback	
	Summative assessment	Examination: 50% Coursework: 50% <ul style="list-style-type: none"> <li>- 1 class test (20%)</li> <li>- 2 group projects with presentation (30%)</li> </ul>	