

<b>Module code</b>	SB-4322		
<b>Module Title</b>	Principles of Soil Science		
<b>Degree/Diploma</b>	Bachelor of Science (Biology)		
<b>Type of Module</b>	Major Option		
<b>Modular Credits</b>	4	<b>Total student Workload</b>	8 hours/week
		<b>Contact hours</b>	7 hours/week
<b>Prerequisite</b>	None		
<b>Anti-requisite</b>	None		
<b>Aims</b>			
<p>This module is designed to introduce students to the fundamental aspects of soil science, which cover topics from soil habitat to processes in the soil environment. It will increase the understanding of the basic physical, chemical, mineralogical and biological properties of soils. Furthermore, students will also learn how these soil properties relate to plant growth and functions as well as environmental quality. This module will also introduce students to the methods of soil sampling and, soil physical and chemical analysis.</p>			
<b>Learning Outcomes</b>			
<i>On successful completion of this module, a student will be expected to be able to:</i>			
Lower order :	40%	<ul style="list-style-type: none"> <li>- Describe the fundamental concepts in soil science</li> <li>- Explain the basic physical, chemical, mineralogical and biological properties of soils</li> </ul>	
Middle order :	40%	<ul style="list-style-type: none"> <li>- Relate soil properties to plant growth and functions as well as environmental quality</li> <li>- Apply the methods of soil sampling and analysis in the fields and labs</li> <li>- Conduct lab practicals, collect data, interpret and discuss results</li> </ul>	
Higher order:	20%	<ul style="list-style-type: none"> <li>- Conduct a group presentation on case-studies, problems or topics related to soils</li> <li>- Follow lab procedures and protocols and develop competence in basic soil sampling and analytical techniques</li> <li>- Work independently in writing lab reports, and work effectively in groups during fieldwork and lab practicals</li> </ul>	
<b>Module Contents</b>			
<ul style="list-style-type: none"> <li>- Components and properties of soils</li> <li>- Processes in soil environment</li> <li>- Soil formation and classification</li> <li>- Soil water and hydrology cycle</li> <li>- Soil water, aeration and temperature</li> <li>- Soil colloids, chemical properties and nutrients</li> <li>- Soil organisms and ecology</li> <li>- Soil erosion and land degradation</li> <li>- Soils and chemical pollution</li> <li>- Basic soil sampling and analytical methods</li> </ul>			
<b>Assessment</b>	Formative assessment	Tutorial assignments and feedback	
	Summative assessment	<ul style="list-style-type: none"> <li>Examination: 60%</li> <li>Coursework: 40%</li> <li>- 2 practical reports (20%)</li> <li>- 1 group presentation (10%)</li> <li>- 1 class test (10%)</li> </ul>	