

Module code	SG-2206		
Module Title	Hydrogeology		
Degree/Diploma	Bachelor of Science (Geology)		
Type of Module	Major Core		
Modular Credits	4	Total student Workload	10 hours/week
		Contact hours	6 hours/week
Prerequisite	None		
Anti-requisite	SG-2301 Hydrogeology		
Aims			
<p>The aim of this module is to elucidate the impact of groundwater on the geological environment and the interaction between surface and subsurface water systems. The module will cover different groundwater flow equations, flow to well bores, calculation of aquifer properties, as well as various methods employed in well hydraulics, well testing, drilling and groundwater exploration, groundwater chemistry, public health, waste disposal, contamination and remedies.</p>			
Learning Outcomes			
<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"> - understand the basic hydrologic principles and groundwater equations - understand the basic applications of hydrogeology 	
Middle order :	50%	<ul style="list-style-type: none"> - acquire the rainfall, run off and groundwater data - analyse groundwater data for drinking, irrigation and commercial purposes - analyse and interpret hydrogeological and hydrochemical data - calculate aquifer properties 	
Higher order:	20%	<ul style="list-style-type: none"> - appraise hydro-stratigraphy for groundwater management - work independently and in groups to use state of art techniques 	
Module Contents			
<ul style="list-style-type: none"> - Hydrologic cycle, the hydrologic equation, stream flow and hydrographs, evapo-transpiration - Introduction to the theory and principles of groundwater flow - Well drilling and testing, porosity and permeability, Darcy's law - Study of flow nets, the geology of groundwater occurrences, hydrologic cross-sections and maps - Well hydraulics and groundwater modelling - Geophysical exploration methods, well logs - Groundwater contamination/pollution and remediation 			
Assessment	Formative assessment	Practical tests, assignments and feedback	
	Summative assessment	Examination: 50% Coursework: 50% <ul style="list-style-type: none"> - 7 written assignments (30%) - 1 class test(20%) 	