Module code	SG-2304			
Module Title	Igneous and Metamorphic Rocks			
Degree/Diploma	Bachelor of Science (Geology)			
Type of Module	Major Option			
Modular Credits	4	**Total student Workload**	10	hours/week
		Contact hours	6	hours/week
Prerequisite	None			
Anti-requisite	SG-2202 Petrography of Igneous and Metamorphic Rocks			

Aims

This module is designed to give the students a description and a comprehensive understanding of the formation and the fundamental petrogenetic processes of igneous and metamorphic rocks on Earth, as well as the most important geochemical signatures of the various rock-types. It aims also to provide the systematic classification of igneous and metamorphic rocks, as well as to show their main industrial and environmental applications.

Learning Outcomes

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

Lower order :	30%	- discriminate igneous, metamorphic and sedimentary rocks - describe and recognise common lithotypes and to recall their names - understand the interior of Earth - know the economic importance of various rock-types
Middle order :	50%	- classify and identify rock-types and to investigate microtextural features - develop skills in macroscopic and microscopic identification of lithologies - interpret macroscopic andmicroscopic textures and structures
Higher order:	20%	- justify the genesis of rocks based on mineralogical and textural criteria - appraise quality of rocks for industrial and environmental applications - work both independently and in groups following protocols

Module Contents

- Origin of elements and minerals in the Universe and Earth; origin of meteorites
- Rock classification and rock types
- Production and properties of magma
- Acidic – Intermediate – Mafic – Ultramafic rocks
- Types of metamorphism, metamorphic agents, metamorphic zones and metamorphic facies
- Study of low, medium and high grade metamorphic rocks and migmatites

Assessment	Formative assessment	Practical tests, assignments and feedback
	Summative assessment	Examination: 50%
		Coursework: 50% - 1mid-term test (20%) - 1 practical examination (30%)