Module code	SG-4313			
Module Title	Seismology			
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 is designed to describe the basics of observational and theoretical seismology. It introduces the science of seismic waves and how these are extensively used to study the structure of the Earth. Students will familiarise themselves with fundamental concepts of seismic waves and earthquake detection. Special sections cover the use of seismic methods in tectonics, and environmental geophysics.

Learning Outcomes

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

Lower order :	30%	- understand the basics of observational and theoretical seismology - comprehend the science of earthquake waves - figure out the structure of the Earth
Middle order :	50%	- evaluate the structure of Lithosphere, Mantle and Core using seismic waves - analyse elastic wave propagation and seismic-ray theory - evaluate finite frequency effects, surface wave dispersion - investigate and analyse a seismic tomography - collect data and find the epicenter and magnitude of an earthquake
Higher order:	20%	- communicate the science of earthquake detection, and geometry of faults - present and discuss the various seismic methodologies in tectonics, and their use in geology, and in environmental geophysics

Module Contents

- Science of earthquake waves, earthquake source, focal mechanisms and moment tensors
- Earthquake mechanics, seismic recording, seismograms
- Earth's structure, seismic tomography
- Seismotectonics, seismic Hazard, earthquake relocation

Assessment	Formative assessment	Practical tests, assignments and feedback
	Summative assessment	Examination: 50%
		Coursework: 50% - 1 individual assignment (25%) - 1 group project(25%)