Module code	SG-5303			
Module Title	Seismic Data Acquisition and Processing			
Degree/Diploma	Master of Science in Petroleum Geosciences by Coursework			
Type of Module	Option			
Modular Credits	4	**Total student Workload**	8	hours/week
		Contact hours	4	hours/week
Prerequisite	None			
Anti-requisite	None			

Aims

To provide an understanding on how to acquire seismic data and how to process it for making a ready seismic section for interpretation that may result in finding oil and gas in the subsurface.

Learning Outcomes

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

Lower order:	30%	- identify the principles of seismic data acquisition and processing - recognise the applications of seismic data acquisition and processing
Middle order:	50%	- design survey for data acquisition - process seismic data and analyse seismic data for QC prior to stacking
Higher order:	20%	- justify a cost effective survey and processing steps - appraise seismic data acquired from different vintages with different geological situations - comprehend different strategy for making a business deal for exploration - work in a challenging environment with team spirit

Module Contents -

Land seismic survey

- Marine seismic survey
- 3D seismic survey
- Pre-processing of seismic data
- Filtering, noise reduction, CMP sorting, NMO correction
- Residual Static correction
- Deconvolution
- Velocity analysis
- Stacking and migration
- 4D (time-lapse), converted-wave (PS) and vertical seismic profile (VSP).

Assessment	Formative assessment	Weekly discussion, practical tests and feedback
		Examination: 50%

	Summative assessment	Coursework: 50% - 5 individual written assignments (35%) - 1 class test (15%)