Module code	SG-5105			
Module Title	Formation Evaluation			
Degree/Diploma	Master of Science in Petroleum Geosciences by Coursework			
Type of Module	Core			
Modular Credits	4	**Total student Workload**	8	hours/week
		Contact hours	4	hours/week
Prerequisite	None			
Anti-requisite	None			

Aims

To provide understanding of different methods and tools for complete formation evaluation including conventional and advanced well logging measurements, mud logging and coring techniques to determine the factors affecting reservoir properties such as porosity and permeability that finally lead to quantify hydrocarbon saturation for reserve estimation.

Learning Outcomes

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

Lower order:	30%	- recall the basic principles of formation evaluation - describe the different tools involved in formation evaluation
Middle order:	50%	- explain mud logging techniques and types of drilling mud - explain the subsurface coring process, and types of core samples - classify the well logging tools according to their functions - explain porosity, permeability, and water saturation - investigate reservoir promising horizons using different tools
Higher order:	20%	- interpret well log data for lithology, porosity and hydrocarbon potential - appraise the reservoir, net sand and net pay zones - work both independently and in groups for projects

Module Contents

- Introduction to Formation Evaluation
- Mud logging and coring. Drilling operation and techniques
- Conventional logging tools Open-hole/Cased-Hole, LWD and MWD
- Reservoir characterisation and petrophysics
- Formation pressure and fluid contacts
- Porosity, permeability and water saturation
- Reserve estimation

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

	Summative assessment	Coursework: 50% - 5 individual written assignments (30%) - 2 class tests (20%)