Module code	SG-5309			
Module Title	Sequence Stratigraphy			
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 lessons to correlate stratigraphic cross sections based on sound sequence stratigraphic practice that will help students to recognise sequence boundaries, flooding surfaces and the various systems tracts through breakdown of complex stratigraphy into its genetically packaged units and to develop their skills in mapping the distribution of the genetic units and searching their temporal succession. To train the students to predict the distribution of source, seal and reservoir rocks from maps and to perceive the architecture and distribution of reservoir rocks from sound concepts of sequence stratigraphy.

Learning Outcomes

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

Lower order:	30%	- interrelate the basic geological concept with the principles of sequence stratigraphy - describe of the basic applications of sequence stratigraphy
Middle order:	50%	- develop a sequence stratigraphic framework - interpret and integrate outcrop, core, well log and seismic data
Higher order:	20%	- perform robust sequence stratigraphic modelling job - predict competently the depositional environment with respect to sea level changes - evaluate potential source, seal and reservoir rocks within the realm of sequence stratigraphy

Module Contents

- Introduction, terminology, controls on sedimentation, accommodation, uplift/subsidence, unconformities eustasy, sea-level/base-level changes, and transgression/regression - Depositional sequences-cycles, cycle hierarchy, global sea-level chart.
- Seismic stratigraphy, identification of depositional sequences and components, sequence and genetic stratigraphy
- Chrono- versus litho-stratigraphy, parasequences and stacking patterns, systems tracts, chronostratigrapic chart. Application to depositional systems, siliciclastic and carbonate systems

Assessment	Formative assessment	Weekly discussion, practical tests and feedback

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