

21GGE507T - PETROLEUM GEOENGINEERING (ELECTIVE)										
Teaching Scheme					Examination Scheme					
L	T	P	C	Hours/Week	Theory			Practical		Total Marks
					MS	ES	IA	LW	LE/Viva	
3	0	0	3	3	25	50	25	-	-	100

Unit I: Hours: 10  
 Definition of Geoengineering, Background context to Geoengineering, Core Skill of a Geoengineer, Examples of Geoengineering, Concept of Teamwork in Geoengineering projects, Petroleum System and definition of Petroleum Geoengineering, Exploration concepts, reserve estimation, uncertainty and techniques of quantifying uncertainty, Reservoir Evaluation and development strategies, Integrated reservoir management.

Unit II Hours: 10  
 Sequence stratigraphic concepts in different depositional environment and reservoir architectural relationship, identification in cyclicity in sediments, Flow unit based on reservoir architecture and their effect on oil recovery; sequence stratigraphy and improved reservoir management.

Unit III Hours:12  
 Fundamental statistical and geological concept for data analysis and integration, porosity and permeability measurement and their relation with geology, evaluation of reservoir heterogeneity and spatial correlation, poro-perm cross-plots and textural control, Integration of geology, geochemistry and petrophysics, comparing permeability from well test and lab based (plug) permeability

Unit IV Hours: 8  
 Reservoir management strategies, Seismic for field management, Geostatistics for reservoir simulation, Habitat of remaining oil and gas, management of water, field revitalization

MAX <40 Hrs>

#### TEXT / REFERENCE BOOKS

1. Integrated Petroleum Reservoir Management- A team approach: Abdus Satter & Ganesh C. Thakur; Penwell Publishing Company, Tulsa, Oklahoma.
2. Practical Reservoir Engineering and Characterization: Richard O. Baker, Harvey W. Yarranton Jerry L. Jensen, Gulf Professional Publishing is an imprint of Elsevier, 2015
3. Reservoir Exploration and Appraisal: Luiz Amado; Gulf Professional Publishing is an imprint of Elsevier, 2013
4. The practice of Reservoir engineering, L . P. Dake, Revised edition, 2006, Elsevier Publisher.