17MPE112 : Advanced Reservoir Engineering										
Teaching Scheme					Examination Scheme					
L	T	P	C	Hrs/Week	Theory			Practical		Total Marks
					MS	ES	IA	LW	LE/Viva	
3	1	0	4	4	25	50	25	-	-	100

Unit - 1: **Hrs- 10**

Introduction to reservoir and reservoir engineering. Petroleum reservoir:type, drive mechanism, geometry, flow system and pattern, Single phase and multiphase fluid flow in different state (steady and unsteady) and different system (linear, radial, spherical) considering compressible, slightly compressible and incompressible fluid, Diffusivity equation and its application for reservoir flow system

Unit-2: **Hrs- 10**

Reservoir Data: type and acquisition. Bottom hole operation for pressure and temperature measurement, Reservoir fluid data: sampling, PVT studies and PVT parameters. Reservoir rock and fluid data: Core study, well log information, Transient well testing and interpretation information. Classification of flow system in porous media,

Unit – 3: **Hrs – 10**

Reservoir engineering principles and activities, Volumetric evaluation of petroleum reserves, Material balance equation and its application, Water Influx calculation, Decline curve analyses method and its application. Reservoir performance analysis by volumetric, material balance and decline curve methods with few case studies.

Unit – 4: **Hrs -9**

Reservoir Engineering activities and management, Reservoir performance analysis and monitoring, Preparation of development schemes, Concept of water flooding, IOR/EOR and workover jobs for reservoir management, Concept of reservoir simulation

Total Hrs - 39

Texts and References:

1. Fundamentals of Reservoir Engineering – L. P. Dake – Elsevier, 17th Edition, 1998
2. Applied Petroleum Reservoir Engineering (Second Edition)- B. C. Craft and M. F. Hawkins Revised by Ronald E. Terry – Prentice Hall.
3. Worldwide Practical Petroleum Reservoir Engineering Methods – H. C. “Slip” Slider – Pennwell Publishing Company.
4. Advance Reservoir Engineering- Tarek Ahmed and Paul D. McKinney - Gulf Professional Publishing – Elsevier -2005
5. Applied Reservoir Engineering (Vol – I & II)– C. R. Smith, G. W. Tracy, R. L. Farrar – OGCI Publications -1992.