

17MPE115 : Advanced Production Engineering

Teaching Scheme					Examination Scheme					
L	T	P	C	Hrs/Week	Theory			Practical		Total Marks
					MS	ES	IA	LW	LE/Viva	
3	0	0	3	3	25	50	25	-	-	100

Unit 1: **Hours : 9**

Conventional Onshore Well Completion

Concept of Well Completion, Casing string types- Drive Pipe, Surface casing, Conductor casing, Intermediate casing, Production liner, Tubing; Casing Head, Casing Hanger, Casing Spool, Well Head integrity- Effect of leakage in A , B and C section, Mono Bore completion.

Unit 2: **Hours: 10**

Advanced (Offshore) Completion System

Introduction – Concept of Offshore well completion, Well Head and Christmas tree(Dry and Wet Type) , Tubing and Packer Completion, Single and Dual string Completion, Material Selection, Completion equipment; Intelligent and Smart completion; Hi-Tech Well Completion: Completion of Horizontal Wells, ERD and Multi Lateral wells, Downhole equipment requirements.

Unit 3: **Hours: 10**

Onshore Production System

Well head fitting & piping, Process flow diagram (PFD) for oil gas, Process control, separation of oil, gas,& water , types of separator, Separation mechanism. De- emulsifications & Desalination of crude. Indirect bath heater and Heater- treater. Produced water treatment. Storage of oil and gas, Liquefied Petroleum Gases (LPG& LNG), Transportation of oil& gas and metering systems.

Unit 4: **Hours: 10**

Offshore Production System

Elements of offshore production system--- Wells (Dry/Wet), well platforms/well servicing rigs, feeder subsea pipeline, process platforms, export pipelines for oil & gas, tankers for evacuation of oil, types of offshore platform - essential personnel, unmanned platform, process control and monitoring—RTU and SCADA system, well automation and optimization, processing of oil, gas and produced water, water injection, Utilities.

Total Hours: 39

Texts and References:

- 7) Dr. Guo Boyun , Computer Aided Petroleum Production Engineering
- 8) Deep water Petroleum Exploration & Production-By William Leffler, Richard Pattardozi, Gordon Sterling
3. Shippen, M and Scott(2004) offshore multiphase production operation, Pennwell books.
4. Robinson,T(1992) - an introduction to offshore technology and terminology .
5. Floating Production System- By N.K. Mitra.