

17MPE123 : Production Enhancement & Optimization

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 : 15**

Production Enhancement

Introduction -- Overview of production enhancement techniques:- Well Analysis and Remedial Measures, Low Productivity – Stimulation, Excessive Production of unwanted fluid, Water Control, Sand Control, Production Optimization. **Stimulation:** - Concept of Formation damage, Type & description of stimulation techniques to mitigate formation damage problem and address issues of low productivity, Design of matrix acidization and acid fracturing. Design of hydraulic fracturing, Multistage fracturing. **Excessive Production of unwanted fluid:** Reasons for excessive production of oil & gas, Causes and hazards of excessive sand production. Industry practices to contain their production. Application of Coil tubing Unit as new generation work over rig for well activation & well repair.

Unit 2 : **Hrs : 9**

Production optimization : Nodal System Analysis- An approach towards total system analysis, Monitoring, Design & optimization of two major lift techniques 1. SRP & 2. Gas lifts system.

Unit 3: **Hrs : 8**

Deep Sea Production : Introduction: Deep water facts & figures, Deep water technology aspect, Conceptual development planning, Deep water JIP, Fast track development strategy, Indian scenario

Sub-Sea Production System:- Floating Production Platform-Mooring & Anchoring, Flow assurance in deep sea, New Technologies.

Unit 4 : **Hrs : 7**

Offshore Safety and fire protection : Safety aspects:-Process safety, Life extension, Well integrity, Rig interferences.

Human factors and safety, ERR Process. Navigation aids, Fire protection system

Total Hrs:- 39

Texts and References:

1. Dr. Guo Boyun, Computer Aided Petroleum Production Engineering
2. H Dale Begg, Production Optimization , OGCI Publication, Tulsa.
3. Deep water Petroleum Exploration & Production-By William Leffler, Richard Pattardozi, Gordon Sterling
4. Floating Production System- By N.K. Mitra.