

20PEB402					INTEGRATED RESERVOIR MANAGEMENT					
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

COURSE OBJECTIVES

- Demonstrate the concepts of Reservoir management in oil and gas exploitation
- Imbibe the knowledge of reservoir engineering in E & P business.
- Develop Skills to analyse reservoir behaviour and monitoring plan for reservoir management.
- Develop skills to implement best reservoir management practices.

Unit I

Hours: 10

Reservoir Management Concept & Process: Definition, history & fundamentals of reservoir management, synergic team approach; Integration of geosciences and engineering for reservoir development, development plans, surveillance & monitoring, Evaluation, Revision of plans & strategies.

Unit II

Hours: 10

Reservoir Data & Model & Performance Analysis: Reservoir Data types: Geosciences, seismic & engineering, Data validation & Integration, Application for Reservoir Model building, Reservoir Performance analysis by various methods: Volumetric, decline curve, material balance & simulation.

Unit III

Hours: 10

Reservoir Management, Development Plans, EOR Concepts & Techno economic Evaluation: Developmental/redevelopment plans for newly developed and matured fields, Differentiation in cases of oil, gas and condensate reservoirs, Importance of improved recovery processes in achieving maximum recovery through development plans. Scenarios for development plans & Techno-economic evaluation. Risk, uncertainties & economic optimization.

Unit IV

Hours: 9

Reservoir Case Studies & Conclusions

Reservoir Management case studies for various types of fields from both onshore and offshore, Importance of IRM. Current challenges and areas of further work.

Total: 39 Hrs

COURSE OUTCOMES

On completion of the course, student will be able to

- CO1- summarize different types of oil and gas resources with different scenarios of determination methods
- CO2- Integrate the fluid, Petrophysics and production data of a reservoir for analysing its static and dynamic performance.
- CO3- Describe the concept of field development in distinct stages in the life cycle of a reservoir with input from reservoir modelling and simulation
- CO4- Analyse the key issues for application of IOR/EOR methods in field development plan.
- CO5- Conceptualize and implement reservoir management practices.
- CO6- Prepare reservoir field development plan for favourable risked-techno-economic scenario.

TEXT / REFERENCE BOOKS

1. Integrated Petroleum Reservoir Management- A team approach: Abdus Satter & Ganesh C. Thakur; Penwell Publishing Company, Tulsa, Oklahoma.
2. Development of oil and gas fields: Dr. Sant Kumar; Allied Printers, Dehra Dun, 248001, India. Finar I.L., "Organic chemistry" Vol-I, 6th Edition, Pearson Education, 2002.
3. The practice of Reservoir engineering, L . P. Dake, Revised edition, 2006, Elsevier Publisher.

END SEMESTER EXAMINATION QUESTION PAPER PATTERN

Max. Marks: 100

Exam Duration: 3 Hrs.

PART A: Part A/Question: <Short Notes, Problems, Numerical>

20 Marks

PART B:<Justification, Criticism, Long answers, Interpretation >

80 Marks