20PEB404P					RESERVOIR ENGINEERING SOFTWARE					
Teaching Scheme					Examination Scheme					
					Theory			Practical		
L	T	P	C	Hours/Week	MS	ES	IA	LW	LE/Viva	Total Marks
0	0	4	2	4	--	--	--	50	50	100

COURSE OBJECTIVES

- To provide an overview of Professional/Industrial software tools used in the Reservoir Engineering Domain
- To provide the significance of Reservoir modelling and simulations for various Reservoir engineering problems

LIST OF EXPERIMENTS

Experiment 1: Seismic Data Loading, Visualization and Processing using Kingdom suite/ tNavigator.

Experiment 2: Petrophysical Investigations using Well Log Analysis.

Experiment 3: Development and validation of Geo-cellular Modelling using Geostatic prediction and Variogram Modelling.

Experiment 4: Fluid Property (PVT) Modelling for Black Oil or Compositional Oil Simulations.

Experiment 5: Introduction to Reservoir Simulation Modelling Workflows.

Experiment 6: Simulation of SPE Comparative Solution-Model 1 (SPE-9723-PA)

Experiment 7: Assisted History Matching using an Optimization Algorithm.

Experiment 8: Simulation of Enhanced Oil recovery Process

Experiment 9: Well Testing Studies using Kappa Engineering

Experiment 10: Fracture design, analysis and optimization using FracPRO.

Experiment 11: Hydraulic Fracture Treatment Design by using FracPro.

COURSE OUTCOMES

CO1: Demonstrate the role of Reservoir simulation software in the upstream Petroleum industry.
CO2: Classify the various software tools available in the Reservoir domain for history matching, performance and Risk analysis
CO3: Create a Static and Dynamic reservoir simulation model using simulation software's.
CO4: Excel the fundamental modelling workflows associated with the simulation software.
CO5: Comprehend complex and dynamic nature of the Reservoir engineering problems including Pressure transient analysis, hydrofracturing etc. and formulate a solution strategy for effective management at the field scale.
CO6: Identify the best tool matching the type and scope of the numerical study deployed to perform in the future.

TEXT / REFERENCE BOOKS

1. Software Manuals

END SEMESTER EXAMINATION
QUESTION PAPER PATTERN

Max. Marks: 100 **Exam Duration: 3 Hrs**

PART A: Evaluation Based on the class performance and Laboratory book **50 Marks**
PART B: Viva Examination based conducted experiments **50 Marks**