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

Week 1-2, 3 and 4 Black oil Reservoir Modelling, Preparation of Static and Dynamic models by

a) **CMG-IMAX**
b) **PETREL-Schlumberger**
c) **Eclipse-Schlumberger**

Week 5-6 Pressure Transient analysis by

a) **KAPPA**
b) **SAPPHIRE**

Week 7-8 Hydrofracturing design by

a) **Frac-Pro**
b) **M-Frac**

Week 9 Reservoir History matching, performance and stochastic modelling

Week 10: Risk analysis and other important software

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

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 EMarks**

PART B: Viva Examination based conducted experiments **50 Marks**