PVP23

23SA8751: SKILLS ON CIVIL ENGINEERIG SOFTWARE (ETABS)

(Syllabus)

Offering Branch	CE	Year: IV	Sem: I
Course Category:	Skill Enhancement course	Credits:	2
Course Type:	Lab	Lecture-Tutorial-Practical:	0-1-2
Prerequisites:	Mechanics of Solids, Structural Analysis, DDRCS	Continuous Evaluation:	30
		Semester End Evaluation:	70
		Total Marks:	100

Course Outcomes:

Upon the successful completion of this course, the students will able to:

CO	Statement	Blooms level
CO 1	Understand the fundamentals of structural modeling and analysis using ETABS.	**L2**
CO 2	Develop analytical models and perform analysis/design of beams (simple and continuous) using ETABS.	**L3**
CO 3	Analyze and design plane frames, portal frames (including sway), and space frames under various loads.	**L4**
CO 4	Model and analyze multi-storey buildings subjected to DL, LL, WL, and EQ loads using ETABS.	**L4**
CO 5	Analyze and design plane and space roof trusses and interpret software results effectively.	**L4**

Course Articulation Matrix:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	2	2			3							2	2
CO2	3	3	2	2	3							3	2
CO3	3	3	3	2	3							3	3
CO4	3	3	3	3	3							3	3
CO5	3	3	2	2	3							3	2

S.No.	List of Experiments	CO
1	Introduction to ETABS	CO1
Conduct the following experiments using ETABS		
2	Analysis and design of Simple beams.	CO2
3	Analysis and design of Continuous beams.	CO2
4	Analysis and design of plane frames.	CO3
5	Analysis and design of portal frames including sway	CO3
6	Analysis and design of space frames subjected to DL (Dead Load) and LL (Live Load).	CO4
7	Analysis and design of a residential building subjected to all loads (DL, LL, WL, EQL).	CO4
8	Analysis and design of plane roof trusses.	CO5
9	Analysis and design of space roof trusses.	CO5

Learning Resource(s)

Text Book(s): Analysis of Structures- Vol. I and II, V. N. Vazirani and M. M. Ratwani, Khanna Publishers, New Delhi**.**