COURSE CONTENT

ADVANCED STRUCTURAL DESIGN LABORATORY

VII Semester: CE

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
ACEC44	**Core**	-	-	3	1.5	30	70	100

Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 36	Total Classes: 36

Prerequisite: No prerequisites required

I. COURSE OVERVIEW:

STAAD. Pro software is one of the most widely used structural analysis and design software products worldwide. It supports over 90 international steel, concrete, timber aluminum design codes. Students can make use of various forms of analysis from the traditional static analysis to more recent analysis methods like p-delta analysis, geometric non-linear analysis, Pushover analysis (Static-Non Linear Analysis) or a buckling analysis. It can also make use of various forms of dynamic analysis methods from time history analysis to response spectrum analysis. The response spectrum analysis feature is supported for both user defined spectra as well as a number of international code specified spectra.

II. COURSE OBJECTIVES:
The students will try to learn:

I. The basic elements with different loading type and supports with the aid of STAAD Pro software.
II. The Analysis and design of 2D frame and multi-storey buildings with different load set.
III. Design of steel structures with truss elements subjected to lateral load.
IV. The Modeling and analyze of bridge truss and deck slab for moving loads.

III.COURSE SYLLABUS:
Week- l: INTRODUCTION TO STAAD PRO
Basic commands used in STAAD Pro.

Week- 2: ANALYSIS OF CONTINUOUS BEAM
Analysis of continuous beam using STAAD Pro.

Week- 3: ANALYSIS OF SINGLE STOREY FRAME
Analysis of single storey frame.

Week- 4: ANALYSIS OF MULTI-STOREY FRAME
Analysis of multi-storey frame.

Week- 5: DESIGN OF MULTI-STOREY FRAME
Design of multi-storey frame design.

Week- 6: ANALYSIS OF MULTI-STOREYED BUILDING
Analysis of multi-storeyed building.

Week- 7: DESIGN OF MULTI-STOREYED BUILDING
Design of multi-storeyed building.

Week- 8:WIND LOAD ANALYSIS ON RCC BUILDING
Wind load analysis on RCC building.

Week- 9: ANALYSIS AND DESIGN OF STEEL TRUSS
Analysis and design of steel truss.

Week- 10: ANALYSIS AND DESIGN OF ISOLATED FOOTING
Analysis and design of isolated footing

Week- 11: ANALYSIS AND DESIGN OF COMBINED FOOTING
Analysis and design of combined footing.

Week- 12: ANALYSIS AND DESIGN OF TRAPEZODIAL FOOTING
Analysis and design of trapezoidal footing.

IV. TEXT BOOKS:
1. T.S.Sarma, "STAAD Pro V8ifor Beginners", Notion Press, 1st Edition, 2014.
2. Sagale, Akshay, and Sandip Dongre. "Analysis and Design of Cable Stayed Bridge using STAAD-PRO", 1st Edition, 2014.

V. WEB REFERENCES:
1. http://www.iu.hio.no/~pererikt/Konstr/Konstr-design-II/staadpro/manual-staadpro2005.pdf
2. http://www.iare.ac.in.