

ADVANCED STRUCTURAL DESIGN LABORATORY

VI Semester: CE								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
ACE113	Core	L	T	P	C	CIA	SEE	Total
		-	-	3	2	30	70	100
Contact Classes: Nil		Tutorial Classes: Nil		Practical Classes: 36			Total Classes: 36	
<p>COURSE OBJECTIVES(CO'S):</p> <p>The course should enable the students to:</p> <ol style="list-style-type: none"> I. Study the basic elements with different loading type and supports with the aid of STAAD Pro software. II. Analyze and design 2D Frame and multi-storey buildings with different load sets III. Synthesize steel structures with truss elements subjected to lateral load IV. Modeling and analyze bridge truss and deck slab for moving loads. <p>COURSE LEARNING OUTCOMES (CLOs):</p> <p>At the end of the course, the student will have the ability to:</p> <ol style="list-style-type: none"> 1. To know the commands of staad pro 2. To analyse the continuous beam and calculate shear force and bending moment. 3. Analyse the continuous beam and evaluate the shear force, bending moment. 4. Evaluate the multistoried frame by analysis. 5. Design the multistoried frame for the shear force and bending moment. 6. Analyse the multistoried building for shear force and bending moment. 7. Design Of Multi-Storeyed Building 8. Evaluate Wind Load Analysis on Rcc Building. 9. Evaluate Analysis ,Design of Steel Truss 10. Analyse And Design of Isolated Footing 11. Analyse And Design of Combined Footing 12. Analysis of Bridge deck. 								
LIST OF EXPERIMENTS								
Week-1	INTRODUCTION TO STAAD PRO							
Introduction & commands								
Week-2	ANALYSIS OF CONTINUOUS BEAM							
Analysis of continuous beam for different loads								
Week-3	ANALYSIS OF SINGLE STOREY FRAME							
Analysis of single frame.								
Week-4	ANALYSIS OF MULTI-STOREY FRAME							
Analysis of multistoried frame.								

Week-5	DESIGN OF MULTI-STOREY FRAME
Design of multi storied frame for different loads.	
Week-6	ANALYSIS OF MULTI-STOREYED BUILDING
Analysis of multi storied building.	
Week-7	DESIGN OF MULTI-STOREYED BUILDING
Design of multistoried building.	
Week-8	WIND LOAD ANALYSIS ON RCC BUILDING
Wind load analysis for 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 OF BRIDGE DECK
Analysis of bridge deck.	
Text Books:	
<ol style="list-style-type: none"> 1. T.S SARMA ,”STAAD PRO V8i for beginner”,Notion press 1st edition august2014. 2. IARE, “Advance Analysis and design laboratory manual. 	
Web References:	
<ol style="list-style-type: none"> 1. http://www.iu.hio.no/~pererikt/Konstr/Konstr-design-II/staadpro/manual-staadpro2005.pdf 2. http://www.iare.ac.in 	
SOFTWARE AND HARDWARE REQUIREMENTS FOR A BATCH OF 36 STUDENTS:	
SOFTWARE: System Software: Microsoft Windows 7. Application Software: STAAD Pro Connect	
HARDWARE: 36 numbers of Desktop Computer Systems	