Jaipur Engineering College and Research Centre, Jaipur

Department of Civil Engineering

Lecture Plan						
Subject Name: Structure Analysis -II **Subject Code: 6CE4-02** **Year:3rd** **Semester: 6th**		**POs** **PO1; PO2; PO3;PO4; PO5;PO6;PO7;PO8; PO9;PO10;PO11; PO12**		**COs** 1. To Understand The Application On Unit Load Method And Strain Energy Method 2. To Understand The Concept Of Moving Or Rolling Load And Analysis The Beam Or Girder (Draw Sfd & Bmd Dia.) With Ild Diagram. 3. To Understand The Concept Of Arches And Cable In Three Hinged, Two Hinged And Fixed Type Parabolic Arches 4.To Understand The Unsymmetrical Bending, And Analyze Multistory Building Using Different Method.		
S. No.	**Lecture No.**	**Topic to be discussed**	**COs**	**Objective of All Unit**	**Outcome of Lecture and CO** **Students are able to:-**	**From page to**
Unit-1	1	Objective, Scope And Outcome Of The Course.	Co1	The article analyses the extent to which the course aims, assessment objectives and assessment instruments emphasize critical thinking.	Understand About Basics Of structure analysis	
	2	Unit Load Method & Their Applications:	Co2		Understand About unit load method	T1 (3-56)
	3	Deflection Of Determinate Beams And Frames	Co1		Understand About The deflection of beam	T1 (3-56)
	4	Analysis Of Determinate And Redundant Frames Up To Two Degree Of Redundancy	Co1 Co2		Understand About The Redundant Frames	T1 (3-56)

	5	Problems	Co1 Co2		Calculate The deflection at different support.	T1 (3-56)
	6	Lack Of Fit In Redundant Frames. Introduction To Energy	Co2		Understand About The energy method	T1 (3-56)
	7	Methods: Strain Energy For Gradually Applied, Suddenly Applied And Impact Loads, Strain Energy Due To Axial Loads, Bending, Shear And Torsion;.	Co2		Understand About The energy method	T1 (3-56)
	8	Problems	Co1 Co2		Calculate The deflection at different support.	T1 (3-56)
Unit-2	9	Castiglione's Theorems & Their Applications In Analysis Of Determinate And Redundant Frames Up To Two Degree Of Redundancy And Trussed Beams; Methods	Co1 Co2		Understand About Applications In Analysis Of Determinate And Redundant Frames	T1 (3-56)
	10	Problems	Co1 Co2		Calculate The deflection at different support	T1 (3-56)
	11	Stresses Due To Temperature	Co1 Co2		Understand about the Stresses Due To Temperature	T1 (3-56)
	12	Lack Of Fit In Redundant Frames; Deflection Of Determinate	Co1 Co2		Understand about the Lack Of Fit In Redundant	T1 (3-56)

		Beams, Frames Using Energy			Frames	
	13	Problems	Co1 Co2		Calculate The deflection at different support	T1 (3-56)
	14	Influence Line Diagram & Rolling Load Introduction	Co1 Co2		Understand about the Influence Line Diagram	T2 (58-77)
	15	Ild For Beams & Frames	Co1 Co2		Understand about the Influence Line Diagram	
Unit-3	16	Problems	Co1, Co2	The article concludes with suggestions for improvement in the writing of the Theory of Knowledge guide so that it might place more emphasis on certain strands of critical thinking that are currently not developed in its structure.	Calculate the maximum stress at different section	T2 (58-77)
	17	Muller-Breslau Principle .	Co1, Co2		Understand the application MBP.	T2 (58-77)
	18	Muller-Breslau Principle And Its Application For Drawing Ild,	Co1,		Understand the application MBP.	T2 (58-77)
	19	Problems	Co1, Co2		Calculate the maximum stress at different section	T2 (58-77)
	20	Rolling Load	Co2		Understand the stress variation due to rolling load	T2 (58-77)
	21	Maximum Stress Resultants In A Member/Section	Co2		Understand the Maximum Stress Resultants In A Member/Section	T2 (58-77)

	22	Absolute Maximum Stress Resultant In A Structure.	Co3		Understand Absolute Maximum Stress	T2 (58-77)
	23	Problems	Co3		Calculate Maximum Stress Resultant In A Structure.	T2 (58-77)
Unit-4	24	Analysis Of Three Hinged Arch	Co3		Analysis Of Three Hinged Arch	T1 (62-118)
	25	Problems	Co3		Calculate Maximum Stress	T1 (62-118)
	26	Analysis Of Two Hinged And Fixed Type Parabolic Arches	Co3		Analysis Of Two Hinged And Fixed Type Parabolic Arches	T1 (62-118)
	27	With Supports At The Same Level And At Different Levels.	Co3		Analysis Of Two Hinged And Fixed Type Parabolic Arches At Different Level	T1 (62-118)
	28	Problems	Co3		Calculate Maximum Stress	
	29	Two Hinged And Fixed Type Parabolic Arches	Co3		Analysis Of Two Hinged And Fixed Type Parabolic Arches	T1 (62-118)
	30	With Supports At The Same Level And At Different Levels.	Co3		Analysis Of Two Hinged And Fixed Type Parabolic Arches at different	T1 (62-118)

					level	
	31	Unsymmetrical Bending	Co4		Understand about Unsymmetrical Bending	
Unit-5	32	Definition, Location Of Na	Co4		Understand about Location Of Na	T3 (623-647)
	33	Computation Of Stresses And Deflection	Co4		Understand about Computation Of Stresses	T3 (623-647)
	34	Problems	Co4		Calculate of Computation of Stresses	T3 (623-647)
	35	Shear Centre And Its Location,	Co4		Understand about Shear Centre And its Location	T3 (623-647)
	36	Problems	Co4		Calculate different Stresses.	T3 (623-647)
	37	Approximate Methods For Lateral Loads	Co4		Understand About The Approximate Methods For Lateral Loads	T3 (557-581)
	38	Analysis Of Multistory Frames By Portal Method	Co4		Understand About The Portal Method For Lateral Loads	T3 (557-581)
	39	Problems	Co1-Co4		Calculate of Stresses by different method.	T3 (557-581)

	40	Cantilever Method & Factor Method.			Understand About The Cantilever Method & Factor Method	
	41	Analysis Of Determinate Space Trusses By Tension Coefficient Method			Understand About The Tension Coefficient Method	
	42	Problems	Co1-Co4		Calculate of Stresses by different method.	
Reference books:		**T1:** Theory of structures, s ramamrutham, r. Narayan., dhanpat rai publishing company. **T2:** Theory of structures, R.S. Khurmi,S. Chand publication. **T3**: Theory of structures(SMTS-II), dr. B.C. Punmia.,Laxmi publication.				