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General Handout for all courses appended to the time table

Course No. : 18CVT55	Dept.: Civil Department
Course Title : Structural analysis-II	Semester: V
Instructor-in-charge : Shashi Kiran S	Academic Year: 2020-21
Lab. Instructor :	

Course Description

The fundamental principles of finding the Bending Moments if Indeterminate structures by various methods like Slope Deflection method, Moment distribution method, Kani’s method for frames with & without sway, and also it covers the concept of influence line diagram for computing Maximum bending moment & Shear force in Determinate Beams.

Text Books:

1. S Ramamrutham and R Narayan: “Theory of Structures”, Dhanpat Rai Publishing Company Private Limited. 2016, ISBN-978 93 516 401 1.
2. S S Bhavikatti: “Structural Analysis Vol. II”, Vikas Publishing House. 2011. ISBN- 978-81- 259-4268-9.

Reference Books:


1. Reddy C. S: “Basic Structural Analysis”, (Chapters 11-13,18), Tata McGraw Hill, New Delhi, 3rd Edition, 2010, ISBN: 9780070702769.
2. G.S. Pandit and R. Gupta: “Theory of Structures” Vol. 2, (Chapters 1-5), Tata McGraw Hill Publication Company Ltd., 1st Edition, ISBN: 9780074634981, 0074634984.

PREREQUISITES

1. Civil Engineering Foundation	Self-study	Notes	Remarks
2. Strength of Materials	Self-study	Notes	
3. Structural Analysis-I	Self-study	Notes	
4			
5			
<i>A good understanding of the above topics is essential</i>			


LECTURE PLAN

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Topic	Topic Details	Number of Lectures	Cumulative lecture hrs.	Unit/ Chapter Reference
Overview	This course deals with methods of analyzing the determinate and indeterminate structures.			
Module-1 Slope Deflection Method	Introduction, Sign convention, Development of slope- deflection equations	1	9	T1: Page No. 583-651
	Analysis of Beams	1		
	Analysis of Beams	1		
	Analysis of Beams	1		
	Analysis of Beams	1		
	Analysis of Orthogonal Rigid jointed plane frames	1		
	Analysis of Orthogonal Rigid jointed plane frames	1		
	Analysis of Orthogonal Rigid jointed plane frames	1		
Revision		1		
Module – II Moment Distribution Method	Introduction, Definition of terms- Distribution factor, Carry over factor, Development of method	1	19	T1: Page No. 291-360
	Analysis of beams	1		
	Analysis of beams	1		
	Analysis of beams	1		
	rigid jointed plane frames (non-sway)	1		
	rigid jointed plane frames (non-sway)	1		
	rigid jointed plane frames (non-sway)	1		
	rigid jointed plane frames (non-sway)	1		
Revision		1		
Assignment		1		
Module – III Sway Analysis	Analysis of rigid jointed plane frames by slope deflection	1	29	T1: Page No. 664-697,
	Analysis of rigid jointed plane	1		

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	frames by slope deflection			361-536
	Analysis of rigid jointed plane frames by slope deflection	1		
	Analysis of rigid jointed plane frames by slope deflection	1		
	Analysis of rigid jointed plane frames by moment distribution method	1		
	Analysis of rigid jointed plane frames by moment distribution method	1		
	Analysis of rigid jointed plane frames by moment distribution method	1		
	Analysis of rigid jointed plane frames by moment distribution method	1		
Revision		1		
PBL		1		
Module – 1V Kani’s & Stiffness Matrix Method	Introduction, Basic Concept	1	39	T1: Page No. 717-771
	Analysis of Continuous beams	1		
	Analysis of Continuous beams	1		
	Analysis of rigid jointed non-sway plane frames.	1		
	Analysis of rigid jointed non-sway plane frames.	1		
	Introduction, Development of stiffness matrix for plane truss element	1		
	Axially rigid plane framed structural elements with kinematic indeterminacy ≤ 3 .	1		
	Axially rigid plane framed structural elements with kinematic indeterminacy ≤ 3 .	1		
Revision		1		
Assignment		1		
Module – V Rolling Load and Influence	Rolling load analysis for simply supported beams	1	49	T1: Page No. 860-882
	Rolling load analysis for simply	1		

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Lines	supported beams for several point loads			
	Rolling load analysis for simply supported beams for several point loads	1		
	Rolling load analysis for simply supported beams for several point loads	1		
	Rolling load analysis for simply supported beams for UDL	1		
	Rolling load analysis for simply supported beams for UDL	1		
	Influence line diagram for reactions SF and BM at a given section	1		
	Influence line diagram for reactions SF and BM at a given section	1		
Revision		1		
Future scope of learning		1		

Evaluation Scheme:

Component	Duration	Weightage	Date (Time)
CIE 1	90 min	20	30/09/2020
CIE 2	90 min	20	09/11/2020
AAT 1	2 days	5	21/09/2020
AAT 2	2 days	5	02/11/2020
Make up CIE	90 min	20	27/11/2020
SEE	180 min	50	11/12/2020
Make up SEE	180 min	50	08/01/2021
Total		100	

Course-in-charge
Shashi Kiran S

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