PARALA MAHARAJA ENGINEERING COLLEGE, BERHAMPUR

LESSON PLAN

Semester-5th **Session**-Odd

Subject(Sub Code)- Structural Analysis-II _PCI51101_**(3-0-1)**

Branch/Course- Civil Engg./B.Tech

Name of faculty: Mrs. LarenSatpathy.

Lecture No	Module	Topics to be delivered	Remarks/Sign of Faculty Member
1	1	Introduction and the basics of displacement method of analysis and comparison with force methods	
2	1	Analysis of continuous beams by slope-deflection method with various end conditions	
3	1	Solved examples	
4	1	Analysis of non-sway frames by slope-deflection method	
5	1	Analysis of sway frames by slope-deflection method	
6	1	Introduction to moment distribution method	
7	1	Application of MD method to continuous beams with different loading condition	
8	1	Solved Examples	
9	1	Non-sway frame analysis by MD method	
10	1	Sway frame analysis by MD method	
11	1	Solved Examples	
12	1	Introduction toKani'smethod	
13	1	Analysis of continuous beams	
14	1	Solved examples for beams	
15	1	Portal Frame analysis	
16	2	Introduction and Analysis of two hinged Arches for dead and live loads	
17	2	Solved Examples	
18	2	Analysis of fixed Arches for dead and live loads	
19	2	Introduction to suspension bridges and girders	
20	2	Analysis of suspension cables and two hinged stiffening girders for dead and live loads	
21	3	Introduction to different matrix methods of analysis and inter relationship between them	
22	3	Application of flexibility matrix method to trusses	
23	3	Analysis of beams	

24	3	Analysis of frames	
25	3	Application of stiffness matrix method to trusses	
26	3	Truss analysis	
27	3	Beam analysis	
28	3	Frame analysis	
29	4	Introduction to plastic analysis	
30	4	Plastic modulus, shear factor, plastic moment of resistance, Load factor	
31	4	Shape factors for different sections	
32	4	Application of upper bound and lower bound theorems	
33	4	Plastic analysis of continuous beam	
34	4	Solved examples	
35	4	Plastic analysis of simple rectangular portals	

Signature of Faculty Member Counter Signature of HOD

COURSE OUTCOMES:

Course Outcome	Descriptions (Students will be able to)
CO1	Classify indeterminate structures, methods of analysis and their applications for design purpose
CO2	Analyze indeterminate beams and frames without and with side sway by using slope deflection and moment distribution method
CO3	Analyze indeterminate beams and simple portal frames by using Kani's method.
CO4	Analyze two hinged and fixed arches and suspension cables with two hinged stiffening girders for dead load and live load
CO5	Apply matrix method of analysis to simple trusses and beam structure.
CO6	Discuss the method of plastic analysis to continuous beams and simple rectangular portals and their applications.