

LESSON PLAN (SUMMER-2026)

VENUS GROUP OF EDUCATIONAL & RESEARCH INSTITUTE,BAHANAGA,BALASORE-756042

Discipline: Civil Engg.	Semester: 4th	Name of the Teaching Faculty: Er.Nillima Malik
Subject: Theory Of Structure	No. of days per week class allotted: 5 nos	Semester From date :22/12/2025 To 18/04/2026
Week No.	Class Day	Theory/Practical Topic
1st	1st	Introduction to axial and eccentric loads.
	2nd	Eccentricity about one principal axis only.
	3rd	Nature of stresses.
	4th	Maximum and minimum stresses.
	5th	Resultant stresses.
2nd	1st	Distribution diagram.
	2nd	Condition for no tension or zero stress at extreme fiber.
	3rd	Limit of eccentricity.
	4th	core of section for rectangular.
	5th	core of circular cross sections.
3rd	1st	Middle third rule.
	2nd	Chimneys of circular cross section subjected to wind pressure.
	3rd	Maximum and minimum stresses.
	4th	Resultant stresses and distribution diagram at base.
	5th	Analysis of dams subjected to horizontal water pressure
4th	1st	Analysis of dams subjected to conditions of stability.
	2nd	Concept of slope and deflection.
	3rd	Stiffness of beams.
	4th	Relation among bending moment.
	5th	Slope, deflection and radius of curvature.
	1st	Double integration method to find slope and deflection of cantilever.
5th	2nd	Simply supported beams subjected to concentrated load and uniformly.
	3rd	Distributed load on entire span.
	4th	Macaulay's method for slope and deflection, application to cantilever.
	5th	Simply supported beam subjected to concentrated and uniformly distributed.
6th	1st	Load on entire span.
	2nd	Concept of Determinate and Indeterminate structures.
	3rd	Concept of fixity.
	4th	Effect of fixity.

6th	5th	Advantages and disadvantages of fixed beam over simply supported beam.
7th	1st	Principle of superposition.
	2nd	Fixed end moments from first principle for beam subjected to point load.
	3rd	UDL over entire span.
	4th	Principle of superposition.
	5th	Fixed end moments from first principle for beam subjected to point load subjected to point load, UDL over entire span.
8th	1st	Application of standard formulae in finding end moments.
	2nd	End reactions and drawing S.F. and B.M. diagrams for a fixed beam.
	3rd	Definition, effect of continuity, nature of moments induced due to continuity.
	4th	concept of deflected shape, practical examples.
	5th	Clapeyron's theorem of three moment.
9th	1st	Application of Clapeyron's theorem maximum up to three spans and two unknown support moment only.
	2nd	Support at same level spans having same and uniform moment of inertia subjected to concentrated loads and uniformly distributed loads over entire span.
	3rd	Concept of influence line diagram (ILD).
	4th	Introduction to moment distribution method, sign convention, Carry over factor.
	5th	Stiffness factor, distribution factor.
10th	1st	Application of moment distribution method to various types of continuous beams subjected to concentrated loads and uniformly distributed load over entire span having same.
	2nd	Different moment of inertia.
	3rd	supports at same level, up to three spans and two unknown support moments only.
	3rd	Introduction to portal frames – Symmetrical portal frames with the concept of Bays and stories.
	4th	Introduction to portal frames – unsymmetrical portal frames with the concept of Bays and stories.
11th	1st	Types of trusses.
	2nd	Calculate support reactions for trusses subjected to point loads at joints.
	3rd	Calculate forces in members of truss using Method of joints and Method of sections.
	4th	Application of standard formulae in finding end moments.
	5th	End reactions and drawing S.F. and B.M. diagrams for a fixed beam.
12th	1st	Maximum and minimum stresses.
	2nd	Concept of Determinate and Indeterminate structures.

12th	3rd	Concept of slope and deflection.
	4th	Stiffness of beams.
	5th	Calculate support reactions for trusses subjected to point loads at joints.
13th	1st	Concept of Indeterminate structures.
	2nd	Concept of Determinate structures.
	3rd	End reactions and drawing S.F. diagrams for a fixed beam.
	4th	End reactions and drawing B.M. diagrams for a fixed beam.
	5th	Revision.