

LESSON PLAN OF 4th SEMESTER CIVIL ENGINEERING

Discipline: CIVIL	Semester: -4	Name of the Teaching Faculty:- Mrs. Rajashree Nayak
Subject: - Design of Steel Structure	No of Days/per Week Class Allotted: - 03	Semester From: - <u>22/12/2025</u> To: - <u>18.04.2026</u> No of Weeks: - 15 Course Code: CEPC 204C
Week	Class Day	Theory Topics
1 st	1 st	Design of connections in steel structures: Introduction to steel structure. Advantages and Disadvantages of steel structure and its properties. Introduction to Limit State Method.
	2 nd	Different types of loads and its combinations. Rolled steel sections.
	3 rd	Types of connection, bolted connection, Strength of bolted joints, Advantages and Disadvantages of bolted connections over riveted connections.
2 nd	1 st	Design of bolted joints for axially loaded members.
	2 nd	Failures of bolted connections. Numerical Solutions.
	3 rd	Types of welds, welded connections, Permissible stresses in weld, Strength of weld.
3 rd	1 st	Failures of welded connection, Different terminology of Fillet weld
	2 nd	Numerical Solutions.
	3 rd	Advantages and disadvantages of weld, Design of fillet weld and butt weld for axial load.
4 th	1 st	Numerical Solutions.
	2 nd	Design of Steel Tension (Limit State Method) Types of sections used for Tension members, Basic concepts, Net sectional area
	3 rd	Provisions of Tension Members according to IS 800:2007
5 th	1 st	Strength of tension member by- yielding of section, rupture of net cross-section and block shear.
	2 nd	Types of Failures with example
	3 rd	Calculate The Design Strength of Tension Members with numerical using IS 800:2007
6 th	1 st	Concept of slenderness ratio, Displacement, Lug Angles.
	2 nd	Numerical Analysis.
	3 rd	Design of axially loaded single angle tension members with bolted and welded connections.
7 th	1 st	Numerical Analysis
	2 nd	Design of axially loaded double angle tension members with bolted and welded connections, Numerical Analysis.
	3 rd	Design of Steel Compression Members (Limit State Method) Introduction, Effective length, Slenderness Ratio, Types of sections, Types of Buckling.
8 th	1 st	Calculation of effective length, Radius of gyration and slenderness ratio, Permissible values of slenderness ratio as per IS 800-2007, Design compressive stress.
	2 nd	Classification of different types of Cross Sections, Numerical Analysis.
	3 rd	Numerical Analysis.
9 th	1 st	Column Formula, Design strength calculations

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10 th	2 nd	Numerical Analysis.
	3 rd	Introduction to built up sections, lacing (Meaning and purpose)
	1 st	Diagrams of single and double lacing and battening system.
11 th	2 nd	Introduction to battening systems and concept behind battening according to IS 800
	3 rd	Numerical Analysis.
	1 st	Compression Member Composed of Two Components Back-to-Back.
12 th	2 nd	Working load design and analysis.
	3 rd	Design of axially loaded single and double angle struts connected by bolted and welded connections with gusset plate.
	1 st	Numerical on Design and Analysis.
13 th	2 nd	Numerical on Design and Analysis.
	3 rd	Design of Steel beams (Limit State Method) Introduction, Types of sections, Behavior of beam in Flexure, Classifications.
	1 st	Lateral stability of beams, Lateral torsional buckling
14 th	2 nd	Bending strength of beams, Shear strength of beams
	3 rd	Web buckling, Web Crippling, Deflection
	1 st	Design procedure of Rolled beams.
15 th	2 nd	Standard beam sections, Bending stress calculations.
	3 rd	Design of simple I and channel section.
	1 st	Check for shear as per IS 800:2007
16 th	2 nd	Simple and builtup sections.
	3 rd	Introduction to plate girder: Components and functions.
	1 st	DOUBT CLEARING CLASS AND REVISION & PREVIOUS FIVE YEARS QUESTION ANSWER DISCUSSION

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