LESSON PLAN OF 5TH SEMESTER CIVIL ENGINEERING

Discipline :- CIVIL	Semester:- 5TH	Name of the Teaching Faculty:- Smt. Rajashree Nayak
Subject:- Structural Design-2	No of Days/per Week Class Allotted :- 04	Semester From:- 14.07.2025 TO 15.11.2025 No of Weeks:- 15

Week	Class Day	Theory Topics
1st	1st	**Introduction** Common steel structures, Advantages & disadvantages of steel structures
	2nd	Types of steel, properties of structural steel.
	3rd	Rolled steel sections, special considerations in steel design.
	4th	Structural analysis and design philosophy.
2nd	1st	Loads and load combinations, Brief review of Principles of Limit State design.
	2nd	**Structural Steel Fasteners and Connections** Bolted Connections Classification of bolts, advantages and disadvantages of bolted connections
	3rd	Different terminology, spacing and edge distance of bolt holes.
	4th	Types of bolted connections. Types of action of fasteners, assumptions and principles of design.
3rd	1st	Strength of plates in a joint, strength of bearing type bolts (shear capacity& Bearing capacity), reduction factors, and shear capacity of HSFG bolts with example problem.
	2nd	Analysis & design of Joints using bearing type and HSFG bolts
	3rd	Efficiency of a joint
	4th	Welded Connections: Advantages and Disadvantages of welded connection
4th	1st	Types of welded joints and specifications for welding
	2nd	Design stresses in welds.
	3rd	Strength of welded joints.
	4th	Numerical problem on welded connection
5th	1st	**Design of Steel tension Members** Common shapes of tension members
	2nd	Common shapes of tension members
	3rd	Analysis and Design of tension members
	4th	Gross Strength of Tension Member
6th	1st	Net Strength of Tension Member
	2nd	Block Shear Strength of Tension Member
	3rd	Numerical Problem on Tension Member
	4th	Numerical Problem on Tension Member
7th	1st	Numerical Problem on Tension Member
	2nd	Lug angle
	3rd	**Design of Steel Compression members** Common shapes of compression members.
	4th	Buckling class of cross sections
8th	1st	slenderness ratio
	2nd	Design compressive stress and strength of compression members.

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	3rd	Design compressive stress and strength of compression members.
	4th	Analysis and Design of compression members
9th	1st	Analysis and Design of compression members
	2nd	Numerical problem solving
	3rd	Numerical problem solving
	4th	Numerical problem solving
10th	1st	**Design of Steel beams:** Common cross sections and their classification.
	2nd	Common cross sections and their classification.
	3rd	Deflection limits According To IS-800
	4th	web buckling and web crippling.
11th	1st	Design of laterally supported beams against bending and shear.
	2nd	Design of laterally supported beams against bending and shear.
	3rd	Design of laterally supported beams against bending and shear.
	4th	Numerical Problem solving
12th	1st	Numerical Problem solving
	2nd	Numerical Problem solving
	3rd	**Design of Tubular Steel Structures:** Round Tubular Section
	4th	Permissible Stresses
13th	1st	Tubular Compression & Tension Members
	2nd	Joints in Tubular trusses
	3rd	Numerical Problem
	4th	Numerical Problem
14th	1st	**Design of Masonry Structures:** Design considerations for Masonry walls & Columns
	2nd	Design considerations for Masonry walls & Columns
	3rd	Load Bearing & Non-Load Bearing walls
	4th	Permissible stresses, Slenderness Ratio
15th	1st	Effective Length, Height & Thickness.
	2nd	Numerical Problem
	3rd	Numerical Problem
	4th	Numerical Problem

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