

LESSON PLAN

Session 2025-26

Discipline: Civil Engineering	Semester: 5th	Name of the faculty: Er. Santoshi Dipty Prusty
Subject: Structural Design - II	No. of Days/week: 04 (Class Allotted -60)	Start Date: 07/07/2025
		End Date: 15/11/2025
Week	Class Day	Theory Topics
1st	1st	Introduction: Common steel structures
	2nd	Advantages & disadvantages of steel structure
	3rd	Loads and load combinations
	4th	Types of steel, properties of structural steel, Common steel structures, Advantages & disadvantages of steel structures.
2nd	1st	Rolled steel sections, special considerations in steel design
	2nd	Structural analysis and design philosophy
	3rd	Brief review of Principles of Limit State designs
	4th	Structural Steel Fasteners and Connections.
3rd	1st	Bolted Connection introduction,
	2nd	Classification of bolts, advantages and disadvantages of bolted connections.
	3rd	Different terminology, spacing and edge distance of bolt holes
	4th	Types of bolted connections
4th	1st	Types of action of fasteners, assumptions and principles of design.
	2nd	Strength of plates in a joint, strength of bearing type bolts (shear capacity& bearing capacity), reduction factors, and shear capacity of HSFG bolts
	3rd	Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces), Efficiency of a joint
	4th	Welded Connections:
5th	1st	Advantages and Disadvantages of welded connection
	2nd	Types of welded joints and specifications for welding
	3rd	Design of Steel Compression members:
	4th	Common shapes of compression members.
6th	1st	Design stresses in welds, Strength of welded joints
	2nd	analysis & design of welded Joints
	3rd	Design of Steel tension Members:
	4th	Introduction
7th	1st	Common shapes used
	2nd	Common shapes of tension members.
	3rd	Maximum values of effective slenderness ratio
	4th	Analysis and Design of tension members. (Considering strength only and concept of block shear failure.)
...	1st	Design of Steel Compression members.
	2nd	Common shapes of compression members

8th	3rd	Buckling class of cross sections, slenderness ratio
	4th	Design compressive stress and strength of compression members
9th	1st	Design of Steel beams:
	2nd	Common cross sections and their classification
	3rd	Deflection limits, web buckling and web crippling.
	4th	Design of laterally supported beams against bending and shear.- Design of Tubular Steel Structures:
10th	1st	Round Tubular Sections, Permissible Stresses
	2nd	Tubular Compression & Tension Members
	3rd	Joints in Tubular trusses
	4th	numericals based on tubular sections
11th	1st	numericals based on tubular sections
	2nd	round tubular section problems
	3rd	Design of Masonry Structures:
	4th	Design considerations for Masonry walls & Column
12th	1st	Load Bearing & Non-Load Bearing walls
	2nd	Permissible stresses
	3rd	Slenderness Ratio
	4th	numericals
13th	1st	numericals
	2nd	reduction factors, and shear capacity of HSFG bolts
	3rd	Slenderness Ratio
	4th	Effective Length,
14th	1st	Height & Thickness
	2nd	Revision
	3rd	Revision
	4th	Revision
15th	1st	Revision
	2nd	Important Question & Answer Discussion
	3rd	Important Question & Answer Discussion
	4th	Important Question & Answer Discussion

Sign. of Teacher

Sign. of H.O.D

Sign. of Principal