

LESSON PLAN OF 5th SEMESTER(2021-22) CIVIL ENGINEERING

Discipline :- CIVIL	Semester:-5 TH	Name of the Teaching Faculty JYOTI PRAKASH BEHERA
Subject:- STRUCTURAL DESIGN– II	No of Days/per Week Class Allotted :-04	Semester From 01.08.2023 To:- 30.11.2023 No of Weeks:- 15
Week	Class Day	Theory/ Practical Topics
1 st	1 st	Introduction Common steel structures, Advantages & disadvantages of steel structures.
	2 nd	Types of steel, properties of structural steel.
	3 rd	Rolled steel sections, special considerations in steel design. Loads and load combinations.
	4 th	Structural analysis and design philosophy.
2 nd	1 st	Brief review of Principles of Limit State design.
	2 nd	Structural Steel Fasteners and Connections. Bolted Connections Classification of bolts, advantages and disadvantages of bolted connections
	3 rd	Different terminology, spacing and edge distance of bolt holes
	4 th	Types of bolted connections. Types of action of fasteners, assumptions and principles of design.
3 rd	1 st	Strength of plates in a joint, strength of bearing type bolts (shear capacity & bearing capacity), reduction factors, and shear capacity of HSFG bolts
	2 nd	Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces)
	3 rd	Efficiency of a joint
	4 th	.Welded Connections: Advantages and Disadvantages of welded connection
4 th	1 st	.Types of welded joints and specifications for welding
	2 nd	Design stresses in welds.
	3 rd	Strength of welded joints.
	4 th	Design of Steel tension Members
5 th	1 st	Common shapes of tension members
	2 nd	Maximum values of effective slenderness ratio
	3 rd	Maximum values of effective slenderness ratio
	4 th	Analysis and Design of tension members.(Considering strength only and concept of block shear failure.)
6 th	1 st	Analysis and Design of tension members.(Considering strength only and concept of block shear failure.)
	2 nd	Analysis and Design of tension members.(Considering strength only and

		concept of block shear failure.)
	3 rd	Numerical practice
	4 th	Numerical practice
7 th	1 st	Numerical practice
	2 nd	Design of Steel Compression members.
	3 rd	Common shapes of compression members.
	4 th	Buckling class of cross sections, slenderness ratio
8 th	1 st	Buckling class of cross sections, slenderness ratio
	2 nd	Design compressive stress and strength of compression members
	3 rd	Design compressive stress and strength of compression members
	4 th	Analysis and Design of compression members (axial load only)
9 th	1 st	Analysis and Design of compression members (axial load only)
	2 nd	Numerical practice
	3 rd	Numerical practice
	4 th	Design of Steel beams
10 th	1 st	Common cross sections and their classification.
	2 nd	Common cross sections and their classification.
	3 rd	Deflection limits, web buckling and web crippling.
	4 th	Design of laterally supported beams against bending and shear.
11 th	1 st	Design of laterally supported beams against bending and shear.
	2 nd	Design of laterally supported beams against bending and shear.
	3 rd	Numerical practice
	4 th	Numerical practice
12 th	1 st	Numerical practice
	2 nd	Design of Tubular Steel Structures
	3 rd	Round Tubular Sections, Permissible Stresses
	4 th	Round Tubular Sections, Permissible Stresses
13 th	1 st	Tubular Compression & Tension Members
	2 nd	Joints in Tubular trusses
	3 rd	Joints in Tubular trusses
	4 th	Design of Masonry Structures
14 th	1 st	Design considerations for Masonry walls & Columns
	2 nd	Design considerations for Masonry walls & Columns
	3 rd	Load Bearing & Non-Load Bearing walls
	4 th	Permissible stresses, Slenderness Ratio
15 th	1 st	Effective Length, Height & Thickness
	2 nd	Numerical practice
	3 rd	Probable question discussion (2marks)
	4 th	Probable question discussion (Long Questions)