KIIT POLYTECHNIC, BHUBANESWAR

LESSON PLAN

Session (2023-2024)

Discipline : CIVIL ENGINEERING	**Semester:5th sem,winter/2023**	**Name of the Teaching Faculty: Suchismita Padhi(Lecturer)** **Email ID:** Suchismita.padhifce@kp.kiit.ac.in
Subject:Structural Design-ll(Th.2)	No. Of Days/Week Class Allotted :04	Start Date :01/08/23 End Date:30/11/23
Week	**Class Day**	**Theory Topics**
1st	1st	Steel structure and common steel structures.
	2nd	Advantages & disadvantages of steel structures.
	3rd	Types of steel, properties of structural steel.
	4th	Rolled steel sections.
2nd	1st	special considerations in steel design.
	2nd	Loads and load combinations.
	3rd	Structural analysis and design philosophy
	4th	Brief review of Principles of Limit State design.
3rd	1st	Bolted Connections
	2nd	Classification of bolts.
	3rd	advantages and disadvantages of bolted connections
	4th	Different terminology, spacing and edge distance of bolt holes.
4th	1st	Types of bolted connections.
	2nd	Problems on bolted connection
	3rd	Problems on bolted connection
	4th	Types of fasteners
5th	1st	Class test
	2nd	Strength of plates in a joint, strength of bearing type bolts (shear capacity& bearing capacity) assumptions and principles of design
	3rd	reduction factors, and shear capacity of HSFG bolts

	4th	Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces)
6th	1st	Quiz test
	2nd	Problems on HSFG bolt.
	3rd	Efficiency of a joint.
	4th	problems
7th	1st	Doubt clearing class
	2nd	Welded Connections:
	3rd	Advantages and Disadvantages of welded connection
	4th	Types of welded joints .
8th	1st	Design stresses in welds.
	2nd	Strength of welded joints
	3rd	specifications for welding
	4th	Problems
9th	1st	Problems
	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.
10th	1st	problems
	2nd	problems
	3rd	Common shapes of compression members
	4th	Builtup sections
11th	1st	Buckling class of cross sections, slenderness ratio
	2nd	Design compressive stress and strength of compression members
	3rd	Analysis and Design of compression members (axial load only).
	4th	Problems
12th	1st	Doubt clearing class
	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
13th	1st	Problems
	2nd	Quiz Test

	3rd	Round Tubular Sections, Permissible Stresses
	4th	Tubular Compression & Tension Members
14th	1st	Joints in Tubular trusses
	2nd	Problems
	3rd	Class test
	4th	Design considerations for Masonry walls & Columns
15th	1st	Load Bearing & Non-Load Bearing walls, Permissible stresses. Slenderness Ratio
	2nd	Effective Length, Height & thickness
	3rd	Problems
	4th	revision