



LESSON PLAN OF 5TH SEMESTER(2024-25) CIVIL ENGINEERING

Discipline:- CIVIL ENGG.	Semester:-5 TH	Name of the Teaching Faculty BIBHU RANJAN SAMAL (Sr.Lecturer)
Subject:- STRUCTURAL DESIGN- II(Th.2)	No of Day./per Week Class Allotted :-04	Semester From:-01/07/2024 To:- 08/11/2024
Week	Class Day	No of Weeks:- 15 Theory/ Practical Topics
1 st	1 st	1.0 Introduction: Common steel structures, Advantages & disadvantages of steel structures. Types of steel, properties of structural steel.
	2 nd	Rolled steel sections, special considerations in steel design. Loads and load combinations.
	3 rd	Structural analysis and design philosophy. Brief review of Principles of Limit State design
	4 th	2.0 Structural Steel Fasteners and Connections Classification of bolts, advantages and disadvantages of bolted connections.
2 nd	1 st	Different terminology, spacing and edge distance of bolt holes. Types of bolted connections.
	2 nd	Types of action of fasteners, assumptions and principles of design.Strength of plates in a joint, strength of bearing type bolts (shear capacity& bearing capacity)
	3 rd	reduction factors, and shear capacity of HSFG bolts. Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces)
	4 th	Efficiency of a joint .Welded Connections: Advantages and Disadvantages of welded connection
3 rd	1 st	Types of welded joints and specifications for welding.
	2 nd	Design stresses in welds
	3 rd	Strength of welded joints. Reduction of design stresses for long joints
	4 th	3.0 Design of Steel tension Members
4 th	1 st	Common shapes of tension members.
	2 nd	Design strength of tension members
	3 rd	yielding of gross cross section, rupture of critical section
	4 th	the concept of block shear
5 th	1 st	Maximum values of effective slenderness ratio
	2 nd	Analysis of tension members
	3 rd	Design of tension members
	4 th	4.0 Design of Steel Compression members
6 th	1 st	Common shapes of compression members
	2 nd	Bulking class of cross sections.
	3 rd	slenderness ratio
	4 th	Design compressive stress
7 th	1 st	strength of compression members.
	2 nd	Analysis of compression members

	3 rd	Design of compression members (axial load only). Analysis
	4 th	5.0 Design of Steel beams Common cross sections
8 th	1 st	their classification
	2 nd	Plastic moment capacity of sections, moment capacity and shear resistance.
	3 rd	Deflection limits, web buckling and web crippling.
	4 th	Design of laterally supported beams against bending and shear.
9 th	1 st	Types of built up sections
	2 nd	design of simple built up sections using flange plates with I-sections or web plates.
	3 rd	6.0 Design of Tubular Steel structures
	4 th	Tube columns and compression members, crinkling Round tubular sections, permissible stresses
10 th	1 st	Tube tension members and tubular roof trusses.
	2 nd	Joints in tubular trusses Design of tubular beams and purlins
	3 rd	7.0 Design of Timber Structures Types of timber
	4 th	Types of grading of timber
11 th	1 st	Types of defects,
	2 nd	Types of permissible stresses
	3 rd	Design of axially loaded timber columns solid, box
	4 th	built up section except spaced columns
12 th	1 st	Design of simple timber structural elements in flexure Solid sections & flitched beams
	2 nd	Problem practice
	3 rd	form factor and moment of resistance of built-up sections
	4 th	Problem practice
13 th	1 st	check for shear, bearing and deflection
	2 nd	Problem practice
	3 rd	8.0 Design of Masonry Structures Design consideration for masonry walls
	4 th	Problem practice
14 th	1 st	Load bearing walls -Permissible stresses Slenderness ratio, Effective length, Effective height
	2 nd	Effective thickness, Eccentricity of loads, Grade of mortar
	3 rd	Non-Load bearing walls – Panel walls, Curtain walls, Partition walls. Design consideration for masonry columns, piers and buttresses
	4 th	Problem practice on steel beam
15 th	1 st	Problem practice on compression memeber
	2 nd	Problem practice on Tension memeber
	3 rd	REVISION
	4 th	Previous Year Question Discussion


Lecturer

verified

Principal 29/6/24
G.I.E.T.(Poly)
Principal
QIET (Polytechnic
Jagatpur, Cttar)


29.06.24
Sr. Lecturer
Sr. Lecturer
Civil Engg. Dept.
G.I.E.T.(Poly), Jagatpur, Ctc