

LESSION PLAN			
DISCIPLINE : CIVIL ENGINEERING	Semester : 5th SEM SEC A	Name of the Teaching faculty: KALYANI MOHANTY	
Subject :- Structural Design - II, TH.2	No.of Days/ week class allotted : 04/week	Semester from date: 01/07/2024 to 08/11/2024 No. of Weeks :19	
Week	Class Day	Topics	Remarks
		Chapter-1 Introduction (5P)	
8th WEEK	1st	1.1 Common steel structures, Advantages & disadvantages of steel structures.	
	2nd	1.2 Types of steel, properties of structural steel.	
	3rd	1.3 Rolled steel sections, Special considerations in steel design	
	4th	1.4 Loads and load combinations.	
9th WEEK	1st	1.5 Structural analysis and design philosophy 1.6 Brief review of Principles of Limit State design.	
		Chapter-2 Structural steel fasteners and connections (10P)	
	2nd	2.1 Bolted connection 2.1.1 Classification of bolts, advantages & diadvantages of bolted connection	
	3rd	2.1.2 Different terminology, spacing and edge distance of bolt holes.	
10th WEEK	4th	2.1.3 Types of bolted connections.	
	1st	2.1.4 Types of action of fasteners, assumptions and principles of design.	
	2nd	2.1.5 Strength of plates in a joint, strength of bearing type bolts (shear capacity& bearing capacity), reduction factors, and shear capacity of HSFG bolts.	
	3rd	2.1.6 Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces)	
11th WEEK	4th	2.1.7 Efficiency of a joint.	
	1st	2.2 Welded Connections: 2.2.1 Advantages and Disadvantages of welded connection. 2.2.2 Types of welded joints and specifications for welding	
	2nd	2.2.3 Design stresses in welds.	
	3rd	2.2.4 Strength of welded joints.	
12th WEEK	4th	3.0 Design of steel tension member (10P)	
	1st	3.1 Common shapes of tension members.	
	2nd	3.2 Maximum value of effective slenderness ratio	
	3rd	Problem practice	
12th WEEK	3rd	Problem practice	
	4th	3.4 Analysis and Design of tension members.(Considering strength only and concept of block shear failure.)	

13th WEEK	1st	3.4 Analysis and Design of tension members.(Considering strength only and concept of block shear failure.)	
	2nd	3.4 Analysis and Design of tension members.(Considering strength only and concept of block shear failure.)	
	3rd	3.4 Analysis and Design of tension members.(
	4th	Problem practice	
14th WEEK	1st	Design problem practice	
		4.0 DESIGN OF STEEL COMPRESSION MEMBERS (10P)	
	3rd	4.1 Common shapes of compression members.	
	4th	4.2 Buckling class of cross sections, slenderness ratio	
15th WEEK	PUJA VACATION		
16th WEEK	1st	4.2 Buckling class of cross sections, slenderness ratio	
	3rd	4.3 Design compressive stress and strength of compression members.	
	4th	4.3 Design compressive stress and strength of compression members.	
17th WEEK	1st	4.3 Design compressive stress and strength of compression members.	
	2nd	4.4 Analysis and Design of compression members (axial load only).	
	3rd	4.4 Analysis and Design of compression members (axial load only).	
	4th	4.4 Analysis and Design of compression members (axial load only).	
18th WEEK	1st	Problem practice	
		5.0 DESIGN OF STEEL BEAMS (10P)	
	2nd	5.1 Common cross sections and their classification.	
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	4th	5.2 Deflection limits, web buckling and web crippling.	
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		5.3 Design of laterally supported beams against bending and shear.	
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		6.0 DESIGN OF TUBULAR STEEL STRUCTURES (6P)	
		6.1 Round Tubular Sections, Permissible Stresses	

EXTRA CLASSES REQUIRED

6.1 Round Tubular Sections, Permissible Stresses	
6.2 Tubular Compression & Tension Members	
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6.3 Joints in tubular Trussess	
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7.0 DESIGN OF MASONRY STRUCTURES:(9P)	
7.1 Design considerations for Masonry walls & Columns, Load Bearing & Non-Load Bearing walls, Permissible stresses, Slenderness Ratio, Effective Length, Height & Thickness.	
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Kalyani Mohanty

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