

LESSION PLAN			
DISCIPLINE : CIVIL	Semester :5th sem (Sec.B)	Name of the Teaching faculty: Simadri kumar bal	
Subject :- Structural Design - II	No.of Days/ week class allotted : 04/week	Semester from date: 15/09/2022 to 22/12/2022 Topics to be covered:-	No. of Weeks :15
Week	Class Day	Topics	Remarks
		Chapter-1 Introduction (5P)	
1 st Week: (15 th Sept- 17th Sept)	1 st	1.1 Common steel structures, Advantages & disadvantages of steel structures.	
	2 nd	1.2 Types of steel, properties of structural steel.	
2 nd Week: (19 th Sept - 24 th Sept)	1 st	1.3 Rolled steel sections, special considerations in steel design	
	2 nd	1.4 Loads and load combinations.	
	3 rd	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)	
	4 th	2.1 Bolted connection 2.1.1 Classification of bolts, advantages & diadvantages of bolted connection	
3 rd Week: (26 th Sept-1st Oct)	1 st	2.1.2 Different terminology, spacing and edge distance of bolt holes.	
	2 nd	2.1.3 Types of bolted connections.	
	3 rd	2.1.4 Types of action of fasteners, assumptions and principles of design.	
	4 th	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.	
4th week	vacation	Puja Vacation	

5 th Week: (10 th Oct- 15 th Oct)	1st	2.1.6 Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces)	
	2nd	2.1.7 Efficiency of a joint.	
	3rd	2.2 Welded Connections: 2.2.1 Advantages and Disadvantages of welded connection. 2.2.2 Types of welded joints and specifications for welding	
	4th	2.2.3 Design stresses in welds.	
6 th Week: (17 th Oct- 22 nd Oct)	1st	2.2.4 Strength of welded joints.	
		3.0 Design of steel tension member (10P)	
	2nd	3.1 Common shapes of tension members.	
	3rd	3.2 Maximum value of effective slenderness ratio	
7th Week (25th Oct- 29 th Oct)	4th	Problem practice	
	2nd	3.4 Analysis and Design of tension members.	
	3rd	Yielding of gross cross section	
8th Week (31st Oct -5th Nov)	4th	Rupture of critical section and the concept of block shear	
	1st	Problem Practice	
	2nd	Problem practice	
	3rd	Problem practice	
9 th Week: (7 th Nov -12 th Nov)	4th	Design problem practice	
		4.0 DESIGN OF STEEL COMPRESSION MEMBERS (10P)	
	1st	4.1 Common shapes of compression members.	
	3rd	4.2 Bulking class of cross sections	
10 th Week: (14 th Nov -19 th Nov)	4th	Slenderness ratio, Problems.	
	1st	4.3 Design compressive stress	
	2nd	Strength of compression members	
	3rd	Problem practice	
	4th	4.4 Analysis and Design of compression member	

11 th Week: (21st Nov - 26 th Nov)	1st	Problem practice	
	2nd	Problem practice	
	3rd	Problem practice	
		5.0 DESIGN OF STEEL BEAMS (10P)	
	4th	5.1 Common cross sections and their classification.	
12 th Week: (28 th Nov -3 rd Dec)	1st	Plastic moment capacity of sections, Moment capacity and shear	
	2nd	5.2 Deflection limits,	
	3rd	Web buckling and web crippling.	
	4th	Problem practice	
13 th Week: (5 th Dec -10 th Dec)	1st	Problem practice	
	2nd	5.3 Design of laterally supported beams against bending and	
	3rd	Problem practice	
	4th	Problem practice	
14 th Week: (12 th Dec- 17th Dec)	1st	Problem practice	
		6.0 DESIGN OF TUBULAR STEEL STRUCTURES (6P)	
	2nd	6.1 Round tubular sections,	
	3rd	permissible stresses.	
15 th Week: (19 th Dec- 22nd Dec)	4th	6.2 Tubular Compression & Tension Members	
	1st	6.3 Joints in Tubular trusses	
	2nd	Problem practice	
		Problem practice	
		7.0 DESIGN OF MASONRY STRUCTURES:(9P)	
Extra classes required		7.1 Design consideration for masonry walls	
		(a) Load bearing walls -Permissible stresses,	
		Effective thickness,	
		(b) Non-Load bearing walls	
		7.2 Design consideration for masonry columns	
		Problem practice	
		Problem practice	
	Problem practice		

Simadri Kumar Bar.

Signature of the faculty