



LESSON PLAN OF STRUCTURAL DESIGN -II 5TH SEMESTER 2022-23

Week	Class Day	Theory	Remarks
1	1-4	Introduction: 1.1 Common steel structures, Advantages & disadvantages of steel structures. 1.2 Types of steel, properties of structural steel. 1.3 Rolled steel sections, special considerations in steel design. 1.4 Loads and load combinations. 1.5 Structural analysis and design philosophy.	
2	5-8	1.6 Brief review of Principles of Limit State design. Structural Steel Fasteners and Connections. 2.1 Bolted Connections 2.1.1 Classification of bolts, advantages and disadvantages of bolted connections. 2.1.2 Different terminology, spacing and edge distance of bolt holes. 2.1.3 Types of bolted connections.	
3	9-12	2.1.4 Types of action of fasteners, assumptions and principles of design. 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. 2.1.6 Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces) 2.1.7 Efficiency of a joint.	
4	13-16	2.2 Welded Connections: 2.2.1 Advantages and Disadvantages of welded connection 2.2.2 Types of welded joints and specifications for welding 2.2.3 Design stresses in welds. 2.2.4 Strength of welded joints. Design of Steel tension Members 3.1 Common shapes of tension members.	
5	17-20	3.1 Common shapes of tension members. 3.2 Maximum values of effective slenderness ratio.	
6	21-24	3.4 Analysis and Design of tension members. (Considering strength only and concept of block shear failure.)	
7	25-28	Problems on tension members Design of Steel Compression members. 4.1 Common shapes of compression members.	
8	29-32	4.2 Buckling class of cross sections, slenderness ratio 4.3 Design compressive stress and strength of compression members.	
9	33-36	4.4 Analysis and Design of compression members (axial load only). Design of Steel beams: 5.1 Common cross sections and their classification.	

10	37-40	5.2 Deflection limits, web buckling and web crippling.	
11	41-44	5.3 Design of laterally supported beams against bending and shear.	
12	45-48	Problems on beams Design of Tubular Steel Structures: 6.1 Round Tubular Sections, Permissible Stresses	
13	49-52	6.2 Tubular Compression & Tension Members 6.3 Joints in Tubular trusses	
14	53-56	Design of Masonry Structures: 7.1 Design considerations for Masonry walls & Columns,	
15	57-60	Load Bearing & Non-Load Bearing walls, Permissible stresses, Slenderness Ratio, Effective Length, Height & Thickness.	

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