

LESSON PLAN: (STRUCTURAL DESIGN II)		
Discipline :	CIVIL ENGINEERING	
Faculty :	DILESWAR SAHOO	
Semester :	5TH	
Duration :	14 WEEKS (15th September 2022 to 22nd December 2022)	
Work Load :	Lecture :	4 Lectures per week (50 minutes per Class)
Week	Week Day	Theory
1 st	1 st	Common steel structures, Advantages & disadvantages of steel structures.
	2 nd	Types of steel, properties of structural steel.
	3 rd	Rolled steel sections, special considerations in steel design.
	4 th	Loads and load combinations. Structural analysis and design philosophy.
2 nd	5 th	Brief review of Principles of Limit State design.
	6 th	Bolted Connections. Classification of bolts, advantages and disadvantages of bolted connections.
	7 th	Different terminology, spacing and edge distance of bolt holes. Types of bolted connections.
	8 th	Types of action of fasteners, assumptions and principles of design.
3 rd	9 th	Strength of plates in a joint, strength of bearing type bolts (shear capacity & Bearing capacity), reduction factors, and shear capacity of HSFG bolts.
	10 th	Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces)
	11 th	Efficiency of a joint.
	12 th	Welded Connections:
4 th	13 th	Advantages and Disadvantages of welded connection .Types of welded joints and specifications for welding
	14 th	Design stresses in welds.
	15 th	Strength of welded joints.
	16 th	Design of Steel tension Members
5 th	17 th	Common shapes of tension members.
	18 th	Maximum values of effective slenderness ratio.
	19 th	Analysis and Design of tension members.
	20 th	Example 1 Analysis and Design of tension members.
6 th	21 st	Example 2 and 3 Analysis and Design of tension members.
	22 nd	Example 3 Analysis and Design of tension members.
	23 rd	Example 5 Analysis and Design of tension members.
	24 th	Design of Steel Compression members
7 th	25 th	Common shapes of compression members
	26 th	Buckling class of cross sections, slenderness ratio
	27 th	Design compressive stress and strength of compression members
	28 th	Problems of Design compressive stress and strength of compression members
8 th	29 th	Analysis and Design of compression members (axial load only).
	30 th	Example 1 of Analysis and Design of compression members (axial load only).
	31 st	Example 2 of Analysis and Design of compression members (axial load only).

	32 nd	Example 3 of Analysis and Design of compression members (axial load only).
9 th	33 rd	Example 4 of Analysis and Design of compression members (axial load only).
	34 th	Design of Steel beams:
	35 th	Common cross sections and their classification.
	36 th	Deflection limits
10 th	37 th	web buckling and web crippling
	38 th	Design of laterally supported beams against bending and shear
	39 th	Problem of Design of laterally supported beams against bending and shear
	40 th	Design of Tubular Steel Structures
11 th	41 st	Round Tubular Sections, Permissible Stresses
	42 nd	Tubular Compression & Tension Members
	43 rd	Joints in Tubular trusses
	44 th	Problems of Design of Tubular Steel Structures
12 th	45 th	Problems of Tubular Compression & Tension Members
	46 th	Design of Masonry Structures
	47 th	Design considerations for Masonry walls & Columns
	48 th	Load Bearing & Non-Load Bearing walls,
13 th	49 th	Permissible stresses
	50 th	Slenderness Ratio
	51 st	Effective Length, Height & Thickness.
	52 nd	Problems on Design of Masonry Structures
14 th	53 rd	Example 1 of Load Bearing & Non-Load Bearing walls,
	54 th	Example 2 of Load Bearing & Non-Load Bearing walls,
	55 th	Example 3 of Load Bearing & Non-Load Bearing walls,
	56 th	Example 4 of Load Bearing & Non-Load Bearing walls,