GANDHI INSTITUTE OF TECHNOLOGY AND MANAGEMENT

Lesson Plan

Name of the Program	**Diploma in CivilEngineering**				
Course Name	**Structural Design-II**			Course Code	**TH2**
Course Year	**Third**	Semester	**5th**	Academic Period	**2022-2023**
No. of Classes allotted per Week	**05**	Planned Classes Required to Complete the Course			**60**

Sl. No.	Topics to be covered	Module	No. of hours Required	Mode of Teaching
1	Common steel structures, Advantages & disadvantages ofsteel structure	I	01	Black Board
2	Types of steel, properties of structural steel.	I	01	Black Board
3	Rolled steel sections, special considerations in steeldesign	I	01	Black Board
4	Loads and load combinations.	I	01	Black Board
5	Structural analysis and design philosophy.	I	01	Black Board
6	Brief review of Principles of Limit State design.	I	01	Black Board
7	**Structural Steel Fasteners and Connections.** Bolted Connections.	II	01	Black Board
8	Classification of bolts	II	01	Black Board
9	advantages and disadvantages of bolted connections.	II	01	Black Board
10	Different terminology	II	01	Black Board
11	spacing and edge distance of bolt holes	II	01	Black Board
12	Types of bolted connections.	II	01	Black Board
13	Types of action of fasteners	II	01	Black Board
14	Types of action of fasteners, assumptions and principles ofdesign	II	01	Black Board
15	Strength of plates in a joint,	II	01	Black Board
16	strength of bearing type bolts (shear capacity& bearingcapacity),	II	01	Black Board
17	reduction factors, and shear capacity of HSFG bolts	II	01	Black Board
18	Analysis & design of Joints using bearing type and HSFGbolts	II	01	Black Board
19	Efficiency of a joint.	II	01	Black Board
20	Welded Connections:	II	01	Black Board
21	Advantages and Disadvantages of welded connection.	II	01	Black Board
22	Types of welded joints	II	01	Black Board

23	specifications for welding. Design stresses in welds.	II	01	Black Board
24	Strength of welded joints	II	01	Black Board
25	Reduction of design stresses for long joints.	II	01	Black Board
26	**Design of Steel tension Members** Common shapes of tension members. 3.2 Design strengthof tension members,	III	01	Black Board
27	yielding of gross cross section, rupture of critical sectionand the concept of block shear.	III	01	Black Board
28	Maximum values of effective slenderness ratio	III	01	Black Board
29	Analysis and Design of tension members.	III	01	Black Board
30	**Design of Steel Compression members.** Common shapes of compression members.	IV	01	Black Board
31	**Design of Steel Compression members.** Common shapes of compression members.	IV	01	Black Board
32	Design compressive stress and strength of compressionmembers.	IV	01	Black Board
33	Analysis and Design of compression members (axialload only).	IV	01	Black Board
34	**Steel Column bases and foundations:** 5.1 Types of column bases and their suitability.	IV	01	Black Board
35	Design of slab base (subjected to axial loading) withconcrete footing.	IV	01	Black Board
36	Design of gusseted base (subjected to axial loading) withconcrete footing.	IV	01	Black Board
37	**Design of Steel beams:** 6.1 Common cross sections and their classification	V	01	Black Board
38	Plastic moment capacity of sections, moment capacity andshear resistance.	V	01	Black Board
39	Deflection limits, web buckling and web crippling.	V	01	Black Board
40	Design of laterally supported beams against bending andshear	V	01	Black Board
41	Types of built up sections and design of simple built up sections using flange plates with I-sections or web plates.	V	01	Black Board
42	Types of built up sections and design of simple built up sections using flange plates with I-sections or web plates.	V	01	Black Board
43	**Design of Tubular Steel structures** 7.1 Round tubular sections, permissible stresses.	VI	01	Black Board
44	Tube columns and compression members, crinkling.	VI	01	Black Board
45	Tube tension members and tubular roof trusses.	VI	01	Black Board
46	Joints in tubular trusses	VI	01	Black Board
47	Design of tubular beams and purlins.	VI	01	Black Board
48	**Design of Masonry Structures:** 9.1 Design consideration for masonry walls (a) Loadbearing walls -Permissible stresses,	VII	01	Black Board
49	Slenderness ratio, Effective length,	VII	01	Black Board

50	Effective height, Effective thickness, Eccentricity of loads,Grade of mortar.	VII	01	Black Board
51	non-Load bearing walls – Panel walls	VII	01	Black Board
52	Curtain walls,	VII	01	Black Board
53	Partition walls.	VII	01	Black Board
54	Design consideration for masonry column	VII	01	Black Board
55	Design consideration for piers and buttresses.	VII	01	Black Board
56	Design considerations for masonry wall footings	VII	01	Black Board
57	Revision		01	Black Board
58	Revision		01	Black Board
59	Doubt clearing		01	Black Board
60	Question discussion		01	Black Board

Signature of the Faculty **Signature of the HoD**