NM Institute Of Engineering and Technology, Bhubaneswar

DEPARTMENT: CIVIL ENG

LESSON PLAN: Academic Year 2022-23 (Even Semester)

Subject/Code: STRUCTURAL DESIGN-1/Th-1   **COURSE: DIPLOMA**

Faculty Name: Dr. JNYANENDRA K PRUSTY   **SEMESTER: 4TH**

Sl. No.	Name of the Topic to Cover	Text Book	Teaching Method	Remark
1	Different methods of design of concrete structures.	T1	P	OK
2	Introduction to reinforced concrete, R.C. sections their behavior, grades of concrete and steel.	T2	G	OK
3	Flexural design and analysis of single reinforced sections from first principles.	T2	P	OK
4	Concept of under reinforced, over reinforced and balanced sections.	T3	G	OK
5	LSM and WSM, Types of limit states, partial safety factors for materials strength.	T1	G	OK
6	Introduction to beam, column, & footing.	R1	G	OK
7	Limit state of collapse (flexure), Assumptions.	T2	G	OK
8	Stress-Strain relationship for concrete and steel.	R1	G	OK
9	Neutral axis, stress block diagram and strain diagram for singly reinforced section.	T1	G	OK
10	Concept of under- reinforced, over-reinforced and limiting section	T2	P	OK
11	Analysis and design: Determination of design constants	R1	G	OK
12	Analysis and design: Moment of resistance	T1	P	OK
13	Analysis and design: Area of steel for rectangular sections	T2	G	OK
14	Necessity of doubly reinforced section, design of doubly reinforced rectangular section	T3	G	OK
15	Necessity of doubly reinforced section, design of doubly reinforced rectangular section	T1	G	OK
16	Design of shear reinforcement	T2	G	OK
17	Bond and types of bond, bond stress	T2	P	OK
18	Numerical problems on Design of shear reinforcement;	T1	G	OK
19	Numerical problems on Design of shear reinforcement;	R1	G	OK
20	Analysis of singly reinforced T-Beam,	R2	G	OK
21	Moment of resistance of T-beam section with neutral axis lying within the flange	R1	G	OK

No.	Topic	Ref.	Method	Remarks
22	Simple numerical problems on deciding effective flange width.	T3	P	OK
23	Simple numerical problems on deciding effective flange width.	T2	G	OK
24	Problems on T-beam	T1	G	OK
25	Problems on T-beam	T3	G	OK
26	Design of simply supported one-way slabs for flexure	T2	G	OK
27	Problems of simply supported one-way slabs for flexure	T2	P	OK.
28	Design of one-way cantilever slabs and cantilevers chajjas for flexure	T1	P	OK.
29	Problems on one-way cantilever slabs and cantilevers chajjas for flexure	T2	G	OK
30	Design of two-way simply supported slabs for flexure	T1	G	OK
31	Problems on two-way simply supported slabs for flexure	T2	G	OK
32	Design of dog-legged staircase	T3	G	OK
33	Problems on dog-legged staircase	R1	P	OK
34	Detailing of reinforcement in stairs spanning longitudinall	R1	P	OK
35	Assumptions in limit state of collapse- compression.	T2	G	OK
36	Definition and classification of columns, effective length of column.	T3	G	OK
37	Reinforcement detailing of column	T3	G	OK
38	Reinforcement detailing of column	T2	P	OK
39	Analysis and design of axially loaded short square column.	R1	P	OK
40	Analysis and design of axially loaded rectangular column.	T3	G	OK
41	Analysis and design of axially loaded circular columns	T2	G	OK
42	Types of footing, Defination	R1	G	OK
43	Design of isolated square column footing of uniform thickness for flexure and shear.	T2	G	OK
44	Problems on design of footing	R1	P	OK
45	Problems on design of footing	R1	P	

Method of Teaching
G: Green Board Teaching
P: Power Point Teaching

Faculty Signature