

# LESSON PLAN

<b>Name of the Institute :</b>		C.V. RAMAN POLYTECHNIC, BHUBANESWAR
<b>Department :</b>		CIVIL ENGINEERING
<b>Semester/Division/Branch :</b>		5 <sup>TH</sup> / CIVIL
<b>Subject Name with code :</b>		STRUCTURAL DESIGN– II (TH.2)
<b>Total No. of Class (Required) :</b>		60
<b>Faculty Name :</b>		SUMITRA PARIDA
Class No.	Brief Description of the Topic/Chapter to be taught	Remarks
1	Introduction, Common steel structures and their advantages & disadvantages.	
2	Types of steel, properties of structural steel, Rolled steel sections & special considerations in steel design.	
3	Loads and load combinations, Structural analysis and review of Principles of Limit State design.	
4	Bolted Connections, its classification, advantages & disadvantages, terminology, spacing and edge distance of bolt holes.	
5	Types of bolted connections.	
6	Types of action of fasteners, its assumptions and principles of design.	
7	Strength of plates in a joint & bearing type bolts.	
8	Analysis & design of Joints and its efficiency.	
9	Welded Connections and its advantages and disadvantages, Types of welded joints and its specifications.	
10	Design stresses in welds and Strength of welded joints.	
11	Reduction of design stresses for long joints.	
12	Introduction to tension member its Common shapes and design strength .	
13	Yielding of gross cross section.	
14	Rupture of critical section.	
15	Concept of block shear & Maximum values of effective slenderness ratio.	
16	Analysis of tension members.	
17	Design of tension members.	
18	Concept of block shear failure.	
19	Introduction to compression members & its shapes.	
20	Bulking class of cross sections and slenderness ratio.	
21	Design compressive stress and strength of compression members.	
22	Numerical problems.	
23	Analysis of compression members.	
24	Numerical problems.	
25	Design of compression members.	
26	Numerical problems.	
27	introduction to column bases their types and suitability.	
28	Design of slab base subjected to axial load with concrete footing.	
29	Numerical problems.	
30	Design of gusseted base with axial loading with concrete footing.	
31	Numerical problems.	
32	Numerical problems.	
33	Steel beam's cross sections and classification.	

34	Plastic moment capacity of sections.	
35	moment capacity and shear resistance.	
36	Deflection limits, web buckling and web crippling.	
37	Design of laterally supported beams. (against bending and shear)	
38	Numerical problems.	
39	Types of built up sections and design of simple built up sections.	
40	Numerical problems.	
41	Round tubular sections & permissible stresses.	
42	Tube columns and compression members, crinkling.	
43	Tube tension members and tubular roof trusses.	
44	Joints in tubular trusses.	
45	Design of tubular beams and purlins.	
46	.....DO.....	
47	Introduction to Timber Structures, timber types, grading, defects & permissible stresses.	
48	Design of axially loaded timber columns.	
49	Numerical problems.	
50	Design of simple timber structural elements in flexure.	
51	Numerical problems.	
52	Introduction to Masonry Structures, & Design consideration for masonry walls .	
53	Load bearing walls and its properties.	
54	.....DO.....	
55	.....DO.....	
56	Non-Load bearing walls.	
57	.....DO.....	
58	Design consideration for masonry columns, piers and buttresses.	
59	Slenderness Ratio, Effective Length, Height & Thickness.	
60	Design considerations for masonry wall footings.	

**Signature of the Faculty**

**Signature of the H.O.D**