

शासकीय पॉलिटेक्निक गरियाबंद



शासकीय पॉलिटेक्निक गरियाबंद

Subject : Structural Design & Drafting -III

Semester : 6th

Session : Jan - June - 2025

Faculty : Nagendra Patel

Phone - 07706-299303

Email- gpolyg@rediffmail.com

Website - www.polygariyaband.ac.in

GOVERNMENT POLYTECHNIC GARIYABAND

DEPARTMENT OF CIVIL ENGINEERING

LESSON PLAN

Session:- Jan-june 2025

Session start date as per University Calendar:

Subject Name:- **STRUCTURAL DESIGN AND DRAFTING-II**

Name of Subject teacher:- Nagendra patel


Course Code:- 2020572(020)

Lecture plus Tutorial/Week:- 03

Lecture No.	No. & Name of chapter	Topic/Subtopics to be covered under this unit	No. of period planned	Actual no. of period taken	Date of class conduction	Remarks
01	UNIT-01 Introduction to IS: 800-2007, Working Stress Method and Plastic Analysis	Introduction to IS:800-2007 Structural steel and properties of structural steel, Standard structural steel sections, Permissible stresses in structural steel.	01	01	20/01/25	
02		Limit state of strength, Limit state of serviceability, Action(loads), Design strength Partial safety factor for materials Loads, Load combination and partial safety factors for loads	01	01	21/01/25	
03		Maximum effective slenderness ratio Introduction to Working Stress Method	01	01	21/01/25	
04		General design requirements of Working Stress Method Permissible stresses as per section 11 of IS800-2007	01	01	22/01/25	
05		Introduction to plastic Analysis Assumptions in plastic analysis	01	01	24/01/25	
06		Plastic moment, shape factor for different common sections, load factor, concept of plastic hinge	01	02	24/01/25 27/01/25	
07		Principle of virtual work and calculation of collapse moment for simple beams	01	01	28/01/25	
08-09		(Simple numerical problems.)	02	02	28/01/25 29/01/25	

10	UNIT-02 Design of bolted and Welded Connections	Bolted Connections: Types of bolts Definition of general terms related to bolting.	01	01	30/01/25	
11		Permissible stresses in bolts	01	01	05/02/25	
12		Types of bolted joints Specifications as per IS 800-2007	01	01	06/02/25	
13		Failure of bolted joints, strength and efficiency of bolted joint	01	02	07/02/25	
14		Design of Bolted Connections (only axially loaded members)	01	02	19/02/25 22/02/25	
15		Welded Connections: Definition of terms related to welded joints.	01	01	22/02/25	
16		Types of welded joints	01	01	24/02/25	
17		Types of welds Strength of welded joint	01	01	27/02/25	
18		Design of welded joints Numerical	01	02	28/02/25	
19	Unit-03 Design of tension and compression member	Tension Members: Types of tension members Sections used as tension members	01	01	04/03/25	
20		Net sectional area, effective net area	01	01	04/03/25	
21		Slenderness Ratio, Types of failures	01	01	06/03/25	
22		Design of axially loaded tension members	01	03	06/03/25 07/03/25	
23		Compression Members: Standard sections used as compression member	01	01	11/03/25	
24		Effective length and slenderness ratio	01	01	11/03/25	
25		Design compressive stress and strength	01	02	12/03/25 13/03/25	
26		Find design strength of strut Design of strut.	01	02	13/03/25 18/03/25	
27		Design of simple columns and built up columns	01	02	18/03/25 19/03/25	
28		Design of lacings, Design of battens	01	02	20/03/25 28/03/25	
29-30	Design of column base Types of column bases		02	02	28/03/25 01/04/25	
31-32		Slab base and gusseted base	02	02	01/04/25 03/04/25	

33	Unit-04 Design of column base And beam	Design of M.S. Slab base with concrete pedestal	01	01	04/04/25
34		Cleat angles, their use only	01	01	04/04/25
35		Sketch of gusseted base	01	02	06/05/25
36		Design of beams: Types of beams, Common sections used as beams, Design of builtup beams (plated beams)	01	03	07/05/25 08/05/25 09/05/25
37		laterally supported and laterally unsupported beams.	01	01	09/05/25
38		Web buckling and web crippling.	01		
39		Design of laterally supported beams for flexure, shear and deflection.	01		
40	Unit-05 Roof trusses	Roof trusses: Types of Trusses	01	01	08/04/25
41		Definitions of terms related to truss.	01	01	08/04/25
42		Combination of loads for design of truss.	01	02	15/04/25 16/04/25
43		Selection of truss Forces in the member.	01	02	16/04/25 17/04/25
44-45		Design of members of truss	02	01 01	21/04/25 22/04/25
46-47		Design of purlin	02	02	22/04/25 23/04/25
48		Detailing of different roof joints and purlin connection	01	01 02	30/04/25 02/05/25
Total			48		


Signature of teacher


HOD