

Department of Civil Engineering
Jharsuguda Engineering School, Jharsuguda

SESSION: WINTER - 2021

Sem: 5th

Subject Code: Th 2

Name of the faculty: Sri Swapnashish Patel

Subject: Structural Design - II

Sri Dhanurjaya Behera

Sl No	Week No	Number of Classes	Topics to be covered	Remarks
1	W1	1	1.1 Common steel structures, Advantages & disadvantages of steel structures.	
2		1	1.2 Types of steel, properties of structural steel	
3		1	1.3 Rolled steel sections, special considerations in steel design. 1.4 Loads and load combinations.	
4		1	1.5 Structural analysis and design philosophy.	
5		1	1.6 Brief review of Principles of Limit State design.	
6	W2	1	2 Structural Steel Fasteners and Connections.	
7		1	2.1 Bolted Connections 2.1.1 Classification of bolts, advantages and disadvantages of bolted connections	
8		1	2.1.2 Different terminology, spacing and edge distance of bolt holes.	
9		1	2.1.3 Types of bolted connections.	
10		1	2.1.4 Types of action of fasteners, assumptions and principles of design.	

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Sl No	Week No	Number of Classes	Topics to be covered	Remarks
11	W3	1	2.1.5 Strength of plates in a joint, strength of bearing type bolts (shear capacity & bearing capacity), reduction factors, and shear capacity of HSFG bolts	
12		1	2.1.6 Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces)	
13	W4	1	2.1.7 Efficiency of a joint	
14		1	2.2 Welded Connections: 2.2.1 Advantages and Disadvantages of welded connection	
15		1	2.2.2 Types of welded joints and specifications for welding 2.2.3 Design stresses in welds.	
16		1	2.2.4 Strength of welded joints.	
17	W5	1	Design of Steel tension Members	
18		1	3.1 Common shapes of tension members.	
19		1	3.2 Maximum values of effective slenderness ratio	
20		1	3.4 Analysis and Design of tension members. (Considering strength only and concept of block shear failure.)	
21	W6	1	3.4 Analysis and Design of tension members. (Considering strength only and concept of block shear failure.)	
22		1	3.4 Analysis and Design of tension members. (Considering strength only and concept of block shear failure.)	

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Sl No	Week No	Number of Classes	Topics to be covered	Remarks
23		1	3.4 Analysis and Design of tension members.(Considering strength only and concept of block shear failure.)	
24		1	Revision & practice of Problems	
25	W7	1	Revision & practice of Problems	
26		1	Revision & practice of Problems	
27		1	Design of Steel Compression members	
28		1	4.1 Common shapes of compression members.	
29	W8	1	4.2 Buckling class of cross sections, slenderness ratio	
30		1	4.3 Design compressive stress and strength of compression members.	
31		1	4.4 Analysis and Design of compression members (axial load only)	
32		1	4.4 Analysis and Design of compression members (axial load only)	
33	W9	1	4.4 Analysis and Design of compression members (axial load only)	
34		1	4.4 Analysis and Design of compression members (axial load only)	
35		1	4.4 Analysis and Design of compression members (axial load only)	
36		1	Revision & practice of Problems	

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Sl No	Week No	Number of Classes	Topics to be covered	Remarks
37	W10	1	Revision & practice of Problems	
38		1	Design of Steel beams	
39		1	5.1 Common cross sections and their classification.	
40		1	5.1 Common cross sections and their classification.	
41	W11	1	5.1 Common cross sections and their classification.	
42		1	5.2 Deflection limits, web buckling and web crippling.	
43		1	5.2 Deflection limits, web buckling and web crippling.	
44		1	5.2 Deflection limits, web buckling and web crippling.	
45	W12	1	5.3 Design of laterally supported beams against bending and shear.	
46		1	Revision & practice of Problems	
47		1	Revision & practice of Problems	
48		1	Revision & practice of Problems	
49	W13	1	Design of Tubular Steel Structures	
50		1	6.1 Round Tubular Sections, Permissible Stresses	
51		1	6.2 Tubular Compression & Tension Members	
52		1	6.3 Joints in Tubular trusses	
53	W14	1	Revision & practice of Problems	
54		1	Revision & practice of Problems	
55		1	7.1 Design considerations for Masonry walls & Columns	
56		1	Load Bearing & Non-Load Bearing walls	

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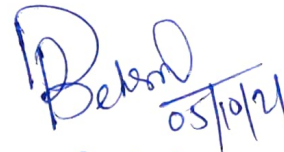
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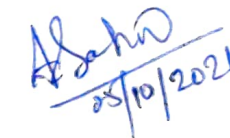
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Sl No	Week No	Number of Classes	Topics to be covered	Remarks
57	W15	1	Permissible stresses, Slenderness Ratio	
58		1	Effective Length, Height & Thickness.	
59		1	Revision & practice of Problems	
60		1	Revision & practice of Problems	
To	15	60		


05/10/21
S. Patel,
Lecturer (Civil)


05/10/21
D. Behera,
Lecturer (Civil)


05/10/2021
A. Sahoo,
i/c HOD (Civil).