



NILASAILA INSTITUTE OF SCIENCE & TECHNOLOGY
SERGARH-756060, BALASORE (ODISHA)
(Approved by AICTE & affiliated to SCTE & VT, Odisha)



LESSON PLAN

SUBJECT: (STRUCTURAL DESIGN-2)TH-02

Name Of The Faculty :- Er. Satyajit Panda

Branch :- Civil Engineering

Session :- 2024-2025

Semester :- 5th

Examination :- 2024 (w)

CHAPTER WISE DISTRIBUTION OF PERIODS

Sl.No.	Name of the chapter as per the Syllabus	No. of Periods as per the Syllabus	No. of periods actually needed
1	Introduction:	5	5
2	Structural Steel Fasteners and Connections.	10	12
3	Design of Steel tension Members	10	10
4	Design of Steel Compression members.	10	11
5	Design of Steel beams:	10	11
6	Design of Tubular Steel Structures	6	7
7	Design of Masonry Structures	9	10
	Total Period:	60	68

S. Panda
26.06.2024
Sign. of Faculty

W. S. Paul
26.06.2024
Sign. Of H.O.D



Discipline: CIVIL ENGINEERING	Semester: 5th	Name of the Teaching Faculty: Er. SATYAJIT PANDA	
		SESSION : 2024-25	EXAMINATION : 2024 (W)
Week	Class Day	Topics to be Covered	
1 st	1 st	1.1 Common steel structures, Advantages & disadvantages of steel structures.	
	2 nd	1.2 Types of steel, properties of structural steel. 1.3 Rolled steel sections, special considerations in steel design.	
	3 rd	1.4 Loads and load combinations. 1.5 Structural analysis and design philosophy	
	4 th	1.4 Loads and load combinations. 1.5 Structural analysis and design philosophy	
2 nd	1 st	1.6 Brief review of Principles of Limit State design.	
	2 nd	2.1 Bolted Connections 2.1.1 Classification of bolts, advantages and disadvantages of bolted connections.	
	3 rd	2.1.2 Different terminology, spacing and edge distance of bolt holes.	
	4 th	2.1.3 Types of bolted connections. 2.1.4 Types of action of fasteners, assumptions and principles of design.	
3 rd	1 st	2.1.3 Types of bolted connections. 2.1.4 Types of action of fasteners, assumptions and principles of design.	
	2 nd	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.	
	3 rd	2.1.6 Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces)	
	4 th	2.1.7 Efficiency of a joint. 2.2 Welded Connections:	
4 th	1 st	2.2.1 Advantages and Disadvantages of welded connection 2.2.2 Types of welded joints and specifications for welding	
	2 nd	2.2.3 Design stresses in welds. 2.2.4 Strength of welded joints	
	3 rd	2.2.3 Design stresses in welds. 2.2.4 Strength of welded joints	
	4 th	3.1 Common shapes of tension members.	
5 th	1 st	3.1 Common shapes of tension members.	
	2 nd	3.2 Maximum values of effective slenderness ratio.	
	3 rd	3.4 Analysis and Design of tension members.(Considering strength only and concept of block shear failure.)	
	4 th	3.4 Analysis and Design of tension members.(Considering strength only and concept of block shear failure.)	
6 th	1 st	3.4 Analysis and Design of tension members.(Considering strength only and concept of block shear failure.)	
	2 nd	3.4 Analysis and Design of tension members.(Considering strength only and concept of block shear failure.)	
	3 rd	3.4 Analysis and Design of tension members.(Considering strength only and concept of block shear failure.)	
	4 th	Revision	
7 th	1 st	Revision	
	2 nd	4.1 Common shapes of compression members.	

7 th	3 rd	4.2 Buckling class of cross sections, slenderness ratio
	4 th	4.2 Buckling class of cross sections, slenderness ratio
8 th	1 st	4.3 Design compressive stress and strength of compression members.
	2 nd	4.3 Design compressive stress and strength of compression members.
	3 rd	4.4 Analysis and Design of compression members (axial load only).
	4 th	4.4 Analysis and Design of compression members (axial load only).
9 th	1 st	4.4 Analysis and Design of compression members (axial load only).
	2 nd	Revision
	3 rd	Revision
	4 th	5.1 Common cross sections and their classification.
10 th	1 st	5.1 Common cross sections and their classification.
	2 nd	5.2 Deflection limits, web buckling and web crippling.
	3 rd	5.2 Deflection limits, web buckling and web crippling.
	4 th	5.2 Deflection limits, web buckling and web crippling.
11 th	1 st	numericals practice
	2 nd	numericals practice
	3 rd	INTERNAL ASSESSMENT
	4 th	INTERNAL ASSESSMENT
12 th	1 st	5.3 Design of laterally supported beams against bending and shear.
	2 nd	5.3 Design of laterally supported beams against bending and shear.
	3 rd	5.3 Design of laterally supported beams against bending and shear.
	4 th	Revision
13 th	1 st	Revision
	2 nd	6.1 Round Tubular Sections, Permissible Stresses
	3 rd	6.1 Round Tubular Sections, Permissible Stresses
	4 th	6.2 Tubular Compression & Tension Members
14 th	1 st	6.2 Tubular Compression & Tension Members
	2 nd	6.3 Joints in Tubular trusses
	3 rd	6.3 Joints in Tubular trusses
	4 th	6.3 Joints in Tubular trusses
15 th	1 st	Revision
	2 nd	Revision
	3 rd	7.1 Design considerations for Masonry walls & Columns, Load Bearing & Non-Load Bearing walls, Permissible stresses, Slenderness Ratio, Effective Length, Height & Thickness.
	4 th	7.1 Design considerations for Masonry walls & Columns, Load Bearing & Non-Load Bearing walls, Permissible stresses, Slenderness Ratio, Effective Length, Height & Thickness.
16 th	1 st	7.1 Design considerations for Masonry walls & Columns, Load Bearing & Non-Load Bearing walls, Permissible stresses, Slenderness Ratio, Effective Length, Height & Thickness.

16 th	2 nd	7.1 Design considerations for Masonry walls & Columns, Load Bearing & Non-Load Bearing walls, Permissible stresses, Slenderness Ratio, Effective Length, Height & Thickness.
	3 rd	7.1 Design considerations for Masonry walls & Columns, Load Bearing & Non-Load Bearing walls, Permissible stresses, Slenderness Ratio, Effective Length, Height & Thickness.
	4 th	7.1 Design considerations for Masonry walls & Columns, Load Bearing & Non-Load Bearing walls, Permissible stresses, Slenderness Ratio, Effective Length, Height & Thickness.
17 th	1 st	NUMERICALS PRACTICE
	2 nd	NUMERICALS PRACTICE
	3 rd	REVISION
	4 th	REVISION

S. Panda
28.06.2024
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28.06.2024
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