



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



LESSON PLAN

SUBJECT: Th-2 (STRUCTURAL DESIGN-2)

Name Of The Faculty :- Er. Satyajit Panda

Branch :- Civil Engineering

Session :- 2023-24

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

Discipline: CIVIL ENGINEERING	Semester: 5th	Name of the Teaching Faculty: Er. SATYAJIT PANDA	
		SESSION : 2023-24	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.)	

	4th	3.4 Analysis and Design of tension members.(Considering strength only and concept of block shear failure.)
6th	1st	3.4 Analysis and Design of tension members.(Considering strength only and concept of block shear failure.)
	2nd	3.4 Analysis and Design of tension members.(Considering strength only and concept of block shear failure.)
	3rd	3.4 Analysis and Design of tension members.(Considering strength only and concept of block shear failure.)
	4th	Revision
7th	1st	Revision
	2nd	4.1 Common shapes of compression members.
	3rd	4.2 Buckling class of cross sections, slenderness ratio
	4th	4.2 Buckling class of cross sections, slenderness ratio
8th	1st	4.3 Design compressive stress and strength of compression members.
	2nd	4.3 Design compressive stress and strength of compression members.
	3rd	4.4 Analysis and Design of compression members (axial load only).
	4th	4.4 Analysis and Design of compression members (axial load only).
9th	1st	4.4 Analysis and Design of compression members (axial load only).
	2nd	Revision
	3rd	Revision
	4th	5.1 Common cross sections and their classification.
10th	1st	5.1 Common cross sections and their classification.
	2nd	5.2 Deflection limits, web buckling and web crippling.
	3rd	5.2 Deflection limits, web buckling and web crippling.
	4th	5.2 Deflection limits, web buckling and web crippling.
	1st	numericals practice

11th	2nd	numericals practice
	3rd	INTERNAL ASSESMENT
	4th	INTERNAL ASSESMENT
12th	1st	5.3 Design of laterally supported beams against bending and shear.
	2nd	5.3 Design of laterally supported beams against bending and shear.
	3rd	5.3 Design of laterally supported beams against bending and shear.
	4th	Revision
13th	1st	Revision
	2nd	6.1 Round Tubular Sections, Permissible Stresses
	3rd	6.1 Round Tubular Sections, Permissible Stresses
	4th	6.2 Tubular Compression & Tension Members
14th	1st	6.2 Tubular Compression & Tension Members
	2nd	6.3 Joints in Tubular trusses
	3rd	6.3 Joints in Tubular trusses
	4th	6.3 Joints in Tubular trusses
15th	1st	Revision
	2nd	Revision
	3rd	7.1 Design considerations for Masonry walls & Columns, Load Bearing & Non-Load Bearing walls, Permissible stresses, Slenderness Ratio, Effective Length, Height & Thickness.
	4th	7.1 Design considerations for Masonry walls & Columns, Load Bearing & Non-Load Bearing walls, Permissible stresses, Slenderness Ratio, Effective Length, Height & Thickness.
16th	1st	7.1 Design considerations for Masonry walls & Columns, Load Bearing & Non-Load Bearing walls, Permissible stresses, Slenderness Ratio, Effective Length, Height & Thickness.
	2nd	7.1 Design considerations for Masonry walls & Columns, Load Bearing & Non-Load Bearing walls, Permissible stresses, Slenderness Ratio, Effective Length, Height & Thickness.
	3rd	7.1 Design considerations for Masonry walls & Columns, Load Bearing & Non-Load Bearing walls, Permissible stresses, Slenderness Ratio, Effective Length, Height & Thickness.
	4th	7.1 Design considerations for Masonry walls & Columns, Load Bearing & Non-Load Bearing walls, Permissible stresses, Slenderness Ratio, Effective Length, Height & Thickness.

17th	1st	NUMERICALS PRACTICE
	2nd	NUMERICALS PRACTICE
	3rd	REVISION
	4th	REVISION