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

LESSON PLAN

SUBJECT: TH-2 (STRUCTURAL DESIGN -II)

Name Of The Faculty :- Er. Satyajit Panda
Branch :- Civil Engineering **Semester :-** 5th
Academic Year : 2025-26 **Examination :-** 2025 (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	7
2	Structural Steel Fasteners and Connections.	10	12
3	Design of Steel tension Members	10	12
4	Design of Steel Compression members.	10	12
5	Design of Steel beams:	10	12
6	Design of Tubular Steel Structures	6	9
7	Design of Masonry Structures	9	11
	Total Period:	60	75

S. Panda 10/07/2025
Sign of Faculty

10.7.2025
Sign of H.O.D.

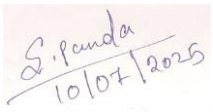
Name of the programme: Diploma in CIVIL ENGINEERING	Semester: 5th	**Name of the Teaching Faculty:** Er. Satyajit Panda	
		Academic Year : 2025-26 **Examination :** 2025 (W)	
Course Code: TH-2	**Course Year:** Third Year	**No. of Classes Alloted Per Week :**	5
		Planned Classes Required to Complete the Course	75

Week	Class Day	Topics to be Covered
1st	1st	1.1 Common steel structures, Advantages & disadvantages of steel structures.
	2nd	1.2 Types of steel, properties of structural steel. 1.3 Rolled steel sections, special considerations in steel design.
	3rd	1.4 Loads and load combinations. 1.5 Structural analysis and design philosophy
	4th	1.4 Loads and load combinations. 1.5 Structural analysis and design philosophy
	5th	1.6 Brief review of Principles of Limit State design.
2nd	1st	REVISION OF UNIT 1
	2nd	REVISION OF UNIT 1
	3rd	2.1 Bolted Connections 2.1.1 Classification of bolts, advantages and disadvantages of bolted connections.
	4th	2.1.2 Different terminology, spacing and edge distance of bolt holes.
	5th	2.1.3 Types of bolted connections. 2.1.4 Types of action of fasteners, assumptions and principles of design.
3rd	1st	2.1.3 Types of bolted connections. 2.1.4 Types of action of fasteners, assumptions and principles of design.
	2nd	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
	3rd	2.1.6 Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces)
	4th	2.1.7 Efficiency of a joint. 2.2 Welded Connections:
	5th	2.1.7 Efficiency of a joint. 2.2 Welded Connections:

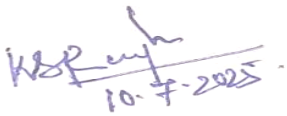
4th	1st	2.2.1 Advantages and Disadvantages of welded connection 2.2.2 Types of welded joints and specifications for welding
	2nd	2.2.3 Design stresses in welds. 2.2.4 Strength of welded joints
	3rd	2.2.3 Design stresses in welds. 2.2.4 Strength of welded joints
	4th	REVISION OF UNIT 2
	5th	REVISION OF UNIT 2
5th	1st	3.1 Common shapes of tension members.
	2nd	3.2 Maximum values of effective slenderness ratio.
	3rd	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.)
	5th	3.4 Analysis and Design of tension members.(Considering strength only and concept of block
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	Numericals practice
	5th	Numericals practice
7th	1st	REVISION OF UNIT 3
	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
	5th	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).

8th	4th	4.4 Analysis and Design of compression members (axial load only).
	5th	4.4 Analysis and Design of compression members (axial load only).
9th	1st	Numericals practice
	2nd	Numericals practice
	3rd	REVISION OF UNIT 4
	4th	REVISION OF UNIT 4
	5th	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.
	5th	5.2 Deflection limits, web buckling and web crippling.
11th	1st	Numericals practice
	2nd	Numericals practice
	3rd	Numericals practice
	4th	Numericals practice
	5st	5.3 Design of laterally supported beams against bending and shear.
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	5.3 Design of laterally supported beams against bending and shear.
	5th	REVISION OF UNIT 5
13th	1st	REVISION OF UNIT 5
	2nd	6.1 Round Tubular Sections, Permissible Stresses
	3rd	6.1 Round Tubular Sections, Permissible Stresses
	4th	6.2 Tubular Compression & Tension Members
	5th	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

14th	4th	REVISION OF UNIT 6
	5th	REVISION OF UNIT 6
15th	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	REVISION OF UNIT 7
	4th	Previous Question Answer Discussion
	5th	Previous Question Answer Discussion



Sign of Faculty



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1.6 Brief review of Principles of Limit State design.