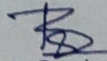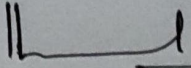# GANAPATI INSTITUTE OF ENGINEERING AND TECHNOLOGY (POLY),JAGATPUR, CUTTACK
LESSON PLAN OF 4TH SEMESTER (2025-2026)

DISCIPLINE : CIVIL ENGG.	SEMESTER-4TH	NAME OF THE TEACHING FACULTY: BIBHU RANJAN SAMAL (SR.LECTURER)	
SUBJECT: DESIGN OF STEEL STRUCTURES (Th.5)	NO. OF DAYS/WEEK CLASS ALLOTTED:03	SEMESTER FROM :22/12/2025 TO:18/04/2026 NO. OF WEEKS:17	
WEEK	CLASS DAY	THEORY/PRACTICAL TOPIC	
1st	1st	**Design of connections in steel structures** • Types of connection,	
	2nd	Bolted connection	
	3rd	Strength of bolted joints	
2nd	1st	• Design of bolted joints for axially loaded members.	
	2nd	• Design of bolted joints for axially loaded members.	
	3rd	Numerical Problems	
3rd	1st	• Types of weld	
	2nd	welded connections	
	3rd	Permissible stresses in weld	
4th	1st	Strength of weld.	
	2nd	• Advantages and disadvantages of weld	
	3rd	Design of fillet weld for axial load.	
5th	1st	Design of butt weld for axial load.	
	2nd	**Design of Steel Tension (Limit State Method)** • Types of sections used for Tension members.	
	3rd	• Strength of tension member by- yielding of section	
6th	1st	Numerical Problems	
	2nd	Numerical Problems	
	3rd	Rupture of net cross-section	
7th	1st	Block shear.	
	2nd	Numerical Problems	
	3rd	Numerical Problems	
8th	1st	• Design of axially loaded single angle tension members with bolted connections.	
	2nd	• Design of axially loaded single angle tension members with welded connections.	
	3rd	Numerical Problems	
9th	1st	Numerical Problems	
	2nd	**Design of Steel Compression Members (Limit State Method)** • Types of sections used as compression member	
	3rd	Calculation of effective length	
10th	1st	Calculation of Radius of gyration	
	2nd	Calculation of slenderness ratio	
	3rd	Permissible values of slenderness ratio as per IS 800-2007	
11th	1st	Design compressive stress	
	2nd	Numerical Problems	
	3rd	Numerical Problems	

23.12.2025

12th	1st	Design of column bases for axially loaded columns only.	
	2nd	• Introduction to built up sections	
	3rd	Lacing and battening (Meaning and purpose), Diagrams of single and double lacing and battening system. (No numerical problems).	
13th	1st	Diagrams of single and double lacing and battening system. (No numerical problems).	
	2nd	Diagrams of single and double lacing and battening system. (No numerical problems).	
	3rd	• Design of axially loaded single struts connected by bolted connections with gusset plate.	
14th	1st	Numerical Problems	
	2nd	Numerical Problems	
	3rd	• Design of axially loaded double struts connected by welded connections.	
15th	1st	Numerical Problems	
	2nd	Numerical Problems	
	3rd	**Design of Steel beams (Limit State Method)**	
16th	1st	• Standard beam sections, Bending stress calculations.	
	2nd	• Design of simple I and channel section.	
	3rd	• Check for shear as per IS 800 2007	
17th	1st	Numerical Problems	
	2nd	• Simple and built up sections,	
	3rd	• Introduction to plate girder: Components and functions (no numerical	

23.12.2025
LECTURER

PRINCIPAL   23.12.25

Principal
GIET (Polytechnic)
Jagatpur, Cuttack

23.12.2025
SR.LECTURER

Sr. Lecturer
Civil Engg. Dept.
G.I.E.T(Poly),Jagatpur,C