

BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF CIVIL ENGINEERING



LESSON PLAN

SUBJECT: STRUCTURAL DESIGN-II (TH 2)

FACULTY: Sri ADITYA RANJAN PATRA

ACCADEMIC SESSION: 2023-24

SEMESTER: 5TH

SEC: C

Sd/-
H O D (Civil Engg.)

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Discipline: Civil Engineering	Semester: 5th (C)		Name of the teaching faculty: Sri Aditya Ranjan Patra
Subject: Structural Design -II	No. of Days/ per week class allotted: 04 periods per week. (Mon, Wed, Thu and Fri – 1 period each)		Semester - From Date: 01/08/2023 To Date: 30/11/2023 No. of weeks: 18 weeks
Week	Class Day	No of period available	Theory Topics
1ST	02/08/2023	1	Introduction
	03/08/2023	1	1.1 Common steel Structures, advantages and disadvantages of steel structure.
	04/08/2023	1	1.2 Type of steel, properties of structural steel.
2ND	07/08/2023	1	1.3 Rolled steel sections, special consideration in steel design.
	09/08/2023	1	1.4 Load and its combinations
	10/08/2023	1	1.5 Structural analysis and design philosophy
	11/08/2023	1	1.6 Brief review of principle of limit state design.
3RD	14/08/2023	1	2.1 Bolted connections.
	16/08/2023	1	2.1.1 Classification of bolts,
	17/08/2023	1	2.1.1 Advantages and disadvantages of bolted connection
	18/08/2023	1	2.1.2 Different terminology, spacing and edge distance of bolt holes.
4TH	21/08/2023	1	2.1.3 types of bolted connections
	23/08/2023	1	2.1.4 Types of action of fasteners, assumptions and principle of design
	24/08/2023	1	Assumptions and principle of design
	25/08/2023	1	2.1.5 strength of plates in a joint, strength of bearing type of bolts
5TH	28/08/2023	1	2.1.5 Reduction factors and shear capacity of HSFG bolts
	31/08/2023	1	2.1.6 Analysis and design of joint using bearing type.
	01/09/2023	1	2.1.7 Efficiency of a joint
6TH	04/09/2023	1	Monthly Class Test - 1
	07/09/2023	1	2.2.1 Welded connections and its advantages and disadvantages.
	08/09/2023	1	2.2.2 Types of welded joints and specification of welding.

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LESSON PLAN

7TH	11/09/2023	1	2.2.3 Design Stress in welds.
	13/09/2023	1	2.2.4 Strength in welded joints.
	14/09/2023	1	2.2 Problems related to bolted and welded connections.
	15/09/2023	1	2.2 Problems related to bolted and welded connections.
8TH	18/09/2023	1	2.2 Problems related to bolted and welded connections.
	21/09/2023	1	3.1 common shape of tension members
	22/09/2023	1	3.2 maximum values of effective slenderness ratio.
9TH	25/09/2023	1	3.4 analysis and design of tension members
	27/09/2023	1	3.4 Problems on tension member
	28/09/2023	1	3.4 Problems on tension member
10TH	04/10/2023	1	3.4 Problems on tension member
	05/10/2023	1	4.1 common shapes of compression members
	06/10/2023	1	4.2 buckling class of cross sections, slenderness ratio
11TH	09/10/2023	1	4.3 design compressive stress and strength of compression members
	11/10/2023	1	Internal Assessment
	12/10/2023	1	4.4 analysis and design of compression members (axial load only).
	13/10/2023	1	4.4 problems on compressive member
12TH	16/10/2023	1	4.4 problems on compressive member
	18/10/2023	1	4.4 problems on compressive member
	19/10/2023	1	4.4 problems on compressive member
	20/10/2023	1	5.1 Common cross sections and their classifications of steel beams
13TH	25/10/2023	1	5.2 deflection limits, web buckling and web crippling
	26/10/2023	1	5.3 design of laterally supported beams against bending and shear
	27/10/2023	1	5.3 problem solving classes
14TH	30/10/2023	1	5.3 problem solving classes
	01/11/2023	1	6.1 round tubular sections ,permissible stresses
	02/11/2023	1	6.2 tubular compression and tension members

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LESSON PLAN

	03/11/2023	1	6.3 joints in tubular trusses
15TH	06/11/2023	1	6.3 Problem solving classes
	08/11/2023	1	6.3 Problem solving classes
	09/11/2023	1	7.1 design considerations of masonry walls.
	10/11/2023	1	7.1 Design considerations of columns
16TH	13/11/2023	1	7.2 load bearing walls
	15/11/2023	1	7.2 load non bearing walls
	16/11/2023	1	7.3 slenderness ratio, effective length, height and thickness
	17/11/2023	1	7.3 Analysis on masonry wall problems
17TH	20/11/2023	1	7.3 Analysis on masonry wall problems
	22/11/2023	1	Monthly Class Test-2
	23/11/2023	1	Previous year question discussion
	24/11/2023	1	Previous year question discussion
18TH	29/11/2023	1	Previous year question discussion
	30/11/2023	1	Discussion