

DHABALESWAR INSTITUTE OF POLYTECHNIC

LESSON PLAN

Discipline CIVIL	Semester 5TH	Name of the Teaching Faculty TANMAYEE SETHI
Subject SD-2	No. of days per Week Class Alloted	Semester from Dt. <u>01/10/21</u> To Dt. <u>08/01/22</u> No. of Weeks: <u>14</u>
Week	Class Day	Theory / Practical Topics
1st	1st	1. INTRODUCTION
	2nd	1.1. Common steel structures, Advantages & disadvantage of steel structures.
	3rd	1.2. TYPES of steel, properties of structural steel.
	4th	1.3. Rolled steel sections, special considerations in steel design.
2nd	DASAHARRA HOLIDAY	1.4. Loads and load combinations
		1.5. Structural analysis and design philosophy.
3rd	1st	1.6. Brief review of principles of limit state design.
	2nd	2. TYPES OF BOLTED CONNECTION
	3rd	2.1 Bolted connections
	4th	2.1.1 Classification of bolts, advantages and disadvantage of bolted connections,
	5th	2.1.2 Different terminology, spacing and edge distance of bolt holes.
4TH	1st	2.1.3 TYPES of bolted connections
	2nd	2.1.4 TYPES of action of fasteners assumptions and principles of design.
	3rd	2.1.5 Strength of plates in a joint, strength of bearing

LESSON PROGRESS

date	Topic to be covered as per Lesson plan	Topic actually covered	Point / Contents Discussed (in brief)	Sign. of Teacher
1.10.21	Basic Introduction to Steel Structures	All covered	Advantages & disadvantages	
6.10.21	Steel structure question, answer discussion	Steel structure question answer discussion.	Steel structure question answer discussion.	
8.10.21	Properties of Structural Steel	All covered	properties of structural steel	
9.10.21	Steel sections	All covered	Steel sections	
11.10.21	Load combinations	All covered	Load combinations	
12.10.21	Structural analysis and design, Philosophy	All covered	design philosophy	
13.10.21	Principles of limit state design.	All covered	principles of limit state.	
15.10.21	Bolted connections	All covered	Bolted connections	
16.10.21	advantages and disadvantage of bolted connection	All covered	advantages and disadvantage	
17.10.21	Spacing distance of bolt holes.	All covered	distance of bolt holes.	
18.10.21	Types of bolted connections.	All covered	Types of bolted connections.	
19.10.21	assumptions and principles of design	All covered	assumptions and principles.	

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<u>5TH</u>	1 st	types bolts (shear capacity & bearing type bolts (shear capacity & bearing capacity), reduction factors, and shear capacity of HSGI bolts. 2.1.6 Analysis & design of joints using bearing type and HSGI bolts (except eccentric load and prying forces)
	2 nd	2.1.7 Efficiency of a joint
	3 rd	2.2. Welded connections
	4 th	2.2.1 Advantages and disadvantage of welded connection
<u>6TH</u>	1 st	2.2.2 Types of welded joints and specifications for welding
	2 nd	2.2.3 Design stresses in welds.
	3 rd	2.2.4 Strength of welded joints
<u>7TH</u>	1 st	3. TYPES OF TENSION MEMBER
	2 nd	3.1 Common shapes of tension members.
	3 rd	3.2 Maximum value of effective slenderness ratio.
	4 th	3.4 Analysis and design of tension members (considering strength only and concept of block shear failure.)

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01.10.21	Shear capacity & bearing capacity	All covered	Shear capacity of HSFG bolts.	
2.11.21	bearing type and HSFG bolts	All covered	bearing type and HSFG bolts.	
03.11.21	Efficiency of a joint.	All covered	Efficiency of a joint.	
05.11.21	Welded connections	All covered	Welded connections.	
06.11.21	Advantages and Disadvantages of welded connection	All covered	Advantages and Disadvantages.	
08.11.21	Types of welded joints	All covered	Specifications for welding.	
09.11.21	Design stresses in welds.	All covered	Design stresses in welds.	
11.11.21	Strength of welded joints.	All covered	Strength of welded joints.	
13.11.21	Common shapes of tension members	All covered	tension members	
14.11.21	Maximum value of effective slenderness ratio	All covered	slenderness ratio.	
15.11.21	Analysis and Design of tension members.	All covered	Tension members	

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<u>8th</u>	1 st	<u>4. TYPES OF COMPRESSION MEMBERS</u>
	2 nd	4.1 Common shapes of compression members.
	3 rd	4.2 Buckling class of cross sections, slenderness ratio.
	4 th	4.3 Design compressive stress and strength of compression members.
<u>9th</u>	1 st	4.4 Analysis and Design of compression members (axial load only)
	2 nd	<u>5. DESIGN OF STEEL BEAMS</u>
	3 rd	5.1 Common cross sections and their classification
	4 th	5.2 Deflection limits, web buckling and web crippling
<u>10th</u>	1 st	5.3 Design of laterally supported beams against bending and shear.
	2 nd	<u>6. DESIGN OF TUBULAR STEEL STRUCTURES</u>
	3 rd	6.1 Round Tubular sections permissible stresses
<u>11th</u>	1 st	6.2 Tubular compression & tension members
	2 nd	6.3 Joints in tubular trusses.

LESSON PROGRESS

Date	Topic to be covered as per Lesson plan	Topic actually covered	Point / Contents Discussed (in brief)	Sign. of Teacher
11/11/21	Common shapes of compression members	All covered	compression members.	
11/11/21	Buckling class of cross sections	All covered	slenderness ratio.	
11/11/21	compressive stress.	All covered	compression members.	
11/11/21	Analysis and design of compression members	All covered	design of compression members	
11/11/21	cross sections and their classification.	All covered	classification	
11/11/21	web buckling	All covered	web crippling	
	laterally supported beams against bending and shear	All covered	laterally supported beams against bending and shear	
11/11/21	Round tubular sections.	All covered	permissible stresses.	
11/11/21	Tubular compression.	All covered	tension members	
	Joint in tubular trusses.	All covered	Tubular trusses.	

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<u>12TH</u>	3 rd	7. DESIGN OF MASONRY STRUCTURES
	4 th	7.1 Design considerations for masonry walls & columns Load bearing & Non-Load bearing walls.
	1 st	7.2. Permissible stresses Slenderness ratio, Effective length, Height & Thickness.
	2 nd	7.3. Class test
	3 rd	7.4. Revision & doubt clearing
	4 th	7.5. Question Answer discussion.

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29.11.21	Design considerations for Masonry walls & columns.	All covered	Masonry walls & columns.	
30.11.21	Slenderness Ratio, Effective length.	All covered	Height & Thickness	
05.12.21	Class test	Class test	Class test	
07.12.21	Revision & doubt clearing	Revision & doubt clearing	Revision & doubt clearing.	
08.12.21	Question Answer discussion	Question Answer discussion	Question Answer discussion.	