

**BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK**  
**DEPARTMENT OF CIVIL ENGINEERING**



**LESSON PLAN**

SUBJECT: STRUCTURAL DESIGN-II (TH 2)

FACULTY: MISS IPSITA THAKUR

ACCADEMIC SESSION: 2024-25

SEMESTER: 5<sup>th</sup>

SEC: B

Sd/-  
H O D (Civil Engg.)

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<b>Discipline:</b> Civil Engineering	<b>Semester:</b> 5 <sup>th</sup> / A		<b>Name of the teaching faculty:</b> MISS SHUBHASHREE MAHARANA
<b>Subject:</b> Structural Design-II	<b>No of days per week class allotted: 04 periods/week</b> (Tue-1, Wed-1, Thu-2 periods)		<b>Semester : From date: 01-07-2024 to date : 08-11-2024</b> <b>No of weeks: 18 weeks</b>
<b>Week</b>	<b>Class Day</b>	<b>No of periods available</b>	<b>Theory/Practical topic</b>
1 <sup>st</sup>	02/07/24	1	1.1 Common steel structures, Advantages & disadvantages of steel structures.
	03/07/24	1	1.2 Types of steel, properties of structural steel
	04/07/24	2	1.3 Rolled steel sections, special considerations in steel design. 1.4 Loads and load combinations
2 <sup>nd</sup>	09/07/24	1	1.5 Structural analysis and design philosophy.
	10/07/24	1	1.6 Brief review of Principles of Limit State design.
	11/07/24	2	2.1 Bolted Connections 2.1.1 Classification of bolts, advantages and disadvantages of bolted connections.
	16/07/24	1	2.1.2 Different terminology, spacing and edge distance of bolt holes.

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3 <sup>rd</sup>	18/07/24	2	2.1.3 Types of bolted connections 2.1.4 Types of action of fasteners, assumptions and principles of design.
4 <sup>th</sup>	23/07/24	1	2.1.5 Strength of plates in a joint, strength of bearing type bolts (shear capacity & bearing capacity), reduction factors.
	24/07/24	1	2.1.6 Analysis & design of Joints using bearing type bolt.
	25/07/24	2	2.1.6 Analysis & design of Joints using bearing type bolt. Numerical solution from the topic
5 <sup>th</sup>	30/07/24	1	2.1.6 Analysis & design of Joints using HSFG bolts
	31/07/24	1	Numerical solution from the topic
	01/08/24	2	2.1.7 Efficiency of a joint.
6 <sup>th</sup>	06/08/24	1	2.2 Welded Connections: 2.2.1 Advantages and Disadvantages of welded connection
	07/08/24	1	2.2.2 Types of welded joints and specifications for welding
	08/08/24	2	2.2.3 Design stresses in welds.
7 <sup>th</sup>	13/08/24	1	2.2.4 Strength of welded joints.

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	14/08/24	1	Discuss previous year questions
8 <sup>th</sup>	20/08/24	1	3.1 Common shapes of tension members.
	21/08/24	1	3.2 Maximum values of effective slenderness ratio.
	22/08/24	2	Numerical solution from the topic
9 <sup>th</sup>	27/08/24	1	3.4 Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
	28/08/24	1	Numerical solution from the topic
	29/08/24	2	4.1 Common shapes of compression members. 4.2 Buckling class of cross sections, slenderness ratio
10 <sup>th</sup>	03/09/24	1	4.3 Design compressive stress and strength of compression members.
	04/09/24	1	4.4 Analysis and Design of compression members (axial load only).
	05/09/24	2	4.4 Analysis and Design of compression members (axial load only). Discuss previous year questions Problem solving from previous year questions
	10/09/24	1	Design of Steel beams: 5.1 Common cross sections and their classification.

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11 <sup>th</sup>			5.2 Deflection limits, web buckling and web crippling.
	11/09/24	1	Design of Steel beams: 5.1 Common cross sections and their classification. 5.2 Deflection limits, web buckling and web crippling.
	12/09/24	2	<b><i>INTERNAL ASSESSMENT</i></b>
12 <sup>th</sup>	17/09/24	1	5.3 Design of laterally supported beams against bending and shear.
	18/09/24	1	5.3 Design of laterally supported beams against bending and shear.
	19/09/24	2	<b><i>CLASS TEST 1</i></b>
13 <sup>th</sup>	24/09/24	1	Discuss previous year questions
	25/09/24	1	6.1 Round Tubular Sections, Permissible Stresses 6.2 Tubular Compression & Tension Members
	26/09/24	2	6.3 Joints in Tubular trusses
14 <sup>th</sup>	01/10/24	1	7.1 Design considerations for Masonry walls & Columns, 7.1 Load Bearing & Non Load Bearing walls, Permissible stresses,
	03/10/24	2	<b><i>CLASS TEST 2</i></b>
15 <sup>th</sup>	15/10/24	1	7.1 Load Bearing & Non Load Bearing walls, Permissible stresses,
	17/10/24	2	.1 Load Bearing & Non Load Bearing walls, Permissible stresses,

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16 <sup>th</sup>	22/10/24	1	7.1 Slenderness Ratio, Effective Length, Height & Thickness.
	23/10/24	1	7.1 Slenderness Ratio, Effective Length, Height & Thickness.
	24/10/24	2	Discuss previous year questions
17 <sup>th</sup>	29/10/24	1	Discuss previous year questions
	30/10/24	1	Revision
18 <sup>th</sup>	05/11/24	1	Revision
	06/11/24	1	Revision
	07/11/24	2	Revision