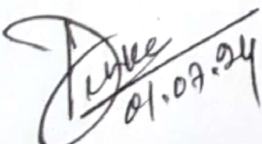


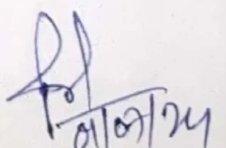
# ACADEMIC SESSION : WINTER- 2023/4

Discipline : CIVIL ENGG	Semester : 5TH	Name of the Teaching Faculty : DEBASIS LENKA
Subject : Structural Design-2	No. of days / week class allotted	Semester From date: 01/07/2024 to 08/11/2024  Nos. of Weeks per semester : 19
Week	Class Day	Theory/ Practical Topics
1 <sup>ST</sup>	1 <sup>st</sup>	Common steel structures, Advantages & disadvantages of steel structures.
	2 <sup>nd</sup>	Types of steel, properties of structural steel.
	3 <sup>rd</sup>	Rolled steel sections, special considerations in steel design.
	4 <sup>th</sup>	Loads and load combinations
2 <sup>ND</sup>	1 <sup>st</sup>	Structural analysis and design philosophy. Brief review of Principles of Limit State design.
	2 <sup>nd</sup>	Classification of bolts, advantages and disadvantages of bolted connections.
	3 <sup>rd</sup>	Different terminology, spacing and edge distance of bolt holes.
	4 <sup>th</sup>	Different terminology, spacing and edge distance of bolt holes.
3 <sup>RD</sup>	1 <sup>st</sup>	Types of bolted connections.
	2 <sup>nd</sup>	Types of bolted connections.
	3 <sup>rd</sup>	Related problems
	4 <sup>th</sup>	Related problems
4 <sup>TH</sup>	1 <sup>st</sup>	Types of action of fasteners, assumptions and principles of design.
	2 <sup>nd</sup>	Strength of plates in a joint, strength of bearing type bolts (shear capacity & bearing capacity), reduction factors, and shear capacity of HSFG bolts.
	3 <sup>rd</sup>	Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces)
	4 <sup>th</sup>	Efficiency of a joint.
5 <sup>TH</sup>	1 <sup>st</sup>	Welded Connections:
	2 <sup>nd</sup>	Advantages and Disadvantages of welded connection
	3 <sup>rd</sup>	Advantages and Disadvantages of welded connection
	4 <sup>th</sup>	Types of welded joints and specifications for welding Design stresses in welds. Strength of welded joints
6 <sup>TH</sup>	1 <sup>st</sup>	Types of welded joints and specifications for welding Design

	2 <sup>nd</sup>	stresses in welds. Strength of welded joints
	3 <sup>rd</sup>	Related problems
	4 <sup>th</sup>	Design of Steel tension Members
	4 <sup>th</sup>	Design of Steel tension Members
7 <sup>TH</sup>	1 <sup>st</sup>	Common shapes of tension members.
	2 <sup>nd</sup>	Maximum values of effective slenderness ratio.
	3 <sup>rd</sup>	Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
	4 <sup>th</sup>	Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
8 <sup>TH</sup>	1 <sup>st</sup>	Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
	2 <sup>nd</sup>	Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
	3 <sup>rd</sup>	Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
	4 <sup>th</sup>	Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
9 <sup>TH</sup>	1 <sup>st</sup>	Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)
	2 <sup>nd</sup>	Design of Steel Compression members
	3 <sup>rd</sup>	Common shapes of compression members.
	4 <sup>th</sup>	Common shapes of compression members.
10 <sup>TH</sup>	1 <sup>st</sup>	Buckling class of cross sections, slenderness ratio
	2 <sup>nd</sup>	Buckling class of cross sections, slenderness ratio
	3 <sup>rd</sup>	Design compressive stress and strength of compression members.
	4 <sup>th</sup>	Design compressive stress and strength of compression members.
11 <sup>TH</sup>	1 <sup>st</sup>	Design compressive stress and strength of compression members.
	2 <sup>nd</sup>	Analysis and Design of compression members (axial load only).
	3 <sup>rd</sup>	Analysis and Design of compression members (axial load only).
	4 <sup>th</sup>	Design of Steel beams:
12 <sup>th</sup>	1 <sup>st</sup>	Common cross sections and their classification
	2 <sup>nd</sup>	Common cross sections and their classification
	3 <sup>rd</sup>	Deflection limits, web buckling and web crippling.
	4 <sup>th</sup>	Deflection limits, web buckling and web crippling.
13 <sup>th</sup>	1 <sup>st</sup>	
	2 <sup>nd</sup>	

	3 <sup>rd</sup>	Puja holidays
	4 <sup>th</sup>	
14 <sup>th</sup>	1 <sup>st</sup>	Deflection limits, web buckling and web crippling.
	2 <sup>nd</sup>	Design of laterally supported beams against bending and shear.
	3 <sup>rd</sup>	Design of laterally supported beams against bending and shear.
	4 <sup>th</sup>	Design of laterally supported beams against bending and shear.
15 <sup>th</sup>	1 <sup>st</sup>	Design of laterally supported beams against bending and shear.
	2 <sup>nd</sup>	Design of Tubular Steel Structures:
	3 <sup>rd</sup>	Round Tubular Sections, Permissible Stresses
	4 <sup>th</sup>	Tubular Compression & Tension Members
16 <sup>th</sup>	1 <sup>st</sup>	Tubular Compression & Tension Members
	2 <sup>nd</sup>	Joints in Tubular trusses
	3 <sup>rd</sup>	Joints in Tubular trusses
	4 <sup>th</sup>	Design of Masonry Structures:
17 <sup>th</sup>	1 <sup>st</sup>	Design considerations for Masonry walls & Columns
	2 <sup>nd</sup>	Design considerations for Masonry walls & Columns
	3 <sup>rd</sup>	Numericals
	4 <sup>th</sup>	Numericals
18 <sup>th</sup>	1 <sup>st</sup>	Load Bearing & Non-Load Bearing walls.
	2 <sup>nd</sup>	Load Bearing & Non-Load Bearing walls
	3 <sup>rd</sup>	Permissible stresses
	4 <sup>th</sup>	Slenderness Ratio, Effective Length
19 <sup>th</sup>	1 <sup>st</sup>	Slenderness Ratio, Effective Length
	2 <sup>nd</sup>	Height & Thickness.
	3 <sup>rd</sup>	Numericals
	4 <sup>th</sup>	Numericals

  
 Prepared By

  
 Approved by