ASIAN SCHOOL OF TECHNOLOGY, BHUBANESWAR

DEPARTMENT OF CIVIL ENGINEERING

LESSON PLAN

Discipline: Civil engineering	Semester : 3rd	No. of periods available: 51	Name of Teaching Faculty: Ankita Rath
Subject: Structural Design II	No. of Days/ per week class allotted : 4 periods per week		No. of weeks : 13
Week	Class Day		Topics to be covered
1st	1st	1	Steel structure and common steel structures.
	2nd	1	Advantages & disadvantages of steel structures.
	3rd	1	Types of steel, properties of structural steel.
	4th	1	Rolled steel sections.
2nd	5th	1	special considerations in steel design.
	6th	1	Loads and load combinations.
	7th	1	Structural analysis and design philosophy
	8th	1	Brief review of Principles of Limit State design.
3rd	9th	1	Bolted Connections
	10th	1	Classification of bolts.
	11th	1	advantages and disadvantages of bolted connections
	12th	1	Different terminology, spacing and edge distance of bolt holes.
4th	13th	1	Types of bolted connections.
	14th	1	Problems on bolted connection
	15th	1	Problems on bolted connection
	16th	1	Types of fasteners

5th	17th	1	Class test
	18th	1	Strength of plates in a joint, strength of bearing type bolts (shear capacity& bearing capacity) assumptions and principles of design
	19th	1	reduction factors, and shear capacity of HSFG bolts
	20th	1	Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces)
6th	21st	1	Quiz test
	22nd	1	Problems on HSFG bolt.
	23rd	1	Efficiency of a joint.
	24th	1	problems
7th	25th	1	Doubt clearing class
	26th	1	Welded Connections:
	27th	1	Advantages and Disadvantages of welded connection
	28th	1	Types of welded joints .
8th	29th	1	Design stresses in welds.
	30th	1	Strength of welded joints
	31st	1	specifications for welding
	32nd	1	Problems
9th	33rd	1	Problems
	34th	1	Common shapes of tension members.
	35th	1	Maximum values of effective slenderness ratio.
	36th	1	Analysis and Design of tension members.(Considering strength only and concept of block shear failure.
10th	37th	1	problems
	38th	1	Common shapes of

			compression members
	39th	1	Builtup sections
	40	1	Buckling class of cross sections, slenderness ratio
11th	41st	1	Design compressive stress and strength of compression members
	42nd	1	Analysis and Design of compression members (axial load only).
	43rd	1	Problems
	44th	1	Doubt clearing class
12th	45th	1	Common cross sections and their classification.
	46th	1	Deflection limits, web buckling and web crippling.
	47th	1	Design of laterally supported beams against bending and shear
	48th	1	Problems
13th	49th	1	Round Tubular Sections, Permissible Stresses
	50th	1	Tubular Compression & Tension Members
	51st	1	Joints in Tubular trusses
	52nd	1	Design considerations for Masonry walls & Columns Load Bearing & Non-Load Bearing walls, Permissible stresses. Slenderness Ratio Effective Length, Height & thickness