LESSON PLAN

NAME OF THE FACULTY	:	MR. KULDEEP
DISIPLINE	:	ARCHITECTURAL ASSISTANTSHIP
SEMESTER	:	4th
SUBJECT	:	STRUCTURE MECHANICS
LESSION PLAN DURATION	:	15 WEEKS
WORK LOAD PER WEEK	:	05

Week	Theory	
	Lecture Day	Topic
1ST	1	Introduction of Structure mechanics.
	2	Force system and Equilibrium
	3	Force: Definitionand its effect, characteristics.
	4	Force: Definition and its representation.
	5	Force: Definition and its types of forces
2ND	6	Force Systems: Coplanar force systems
	7	Force Systems: Non coplanar force systems
	8	Types of coplanar Forces: Collinear, Concurrent
	9	Types of coplanar Forces: Parallel, Non concurrent
	10	Types of coplanar Forces: Non concurrent and Non parallel.
3RD	11	Resultant force
	12	Resultant force and components of a force
	13	Laws of forces: Parallelogram
	14	Laws of forces: Triangle and polygon Laws of forces
	15	Laws of forces: polygon Laws of forces
4TH	16	Free Body Diagram
	17	Lamis theorem
	18	Calculation of resultant of coplanar force systems
	19	Concept of Moment, Characteristics of moment.
	20	Resultant moment, Varignon's theorem

5TH	21	Concept of couple, moment of a couple	
	22	Equilibrium of rigid bodies	
	23	Centroid and Moment of Inertia	
	24	Definition of centre of Gravity and Centroid	
	25	**SESSIONAL TEST - 1**	
6TH	26	Centroid by method of moments of areas for square, rectangular, triangular cross- sections	
	27	Centroid by method of moments of areas for L-shape, T-shape and I shape cross- sections	
	28	Moments of Inertia by methods of moments and Radius of Gyration	
	29	Parallel axis theorem	
	30	Perpendicular Axis Theorem (no derivation)	
7TH	31	Numerical on moment of inertia of Rectangular, Triangular and Circular	
	32	Stress and Strain	
	33	Elasticity, Elastic limit	
	34	Definition of stress and strain	
	35	Types of stress and strain	
8TH	36	Stress strain curve for mild steel	
	37	Hook's Law (Numerical)	
	38	Shear Force and Bending Moment	
	39	Types of loads- Dead load, Live load, snow, wind and seismic loads	
	40	Types of loads- Wind and seismic loads	
9TH	41	Types of loading: Point load, Uniformly distributed load	
	42	Types of loading: uniformly varying load.	
	43	Types of Beams: Simply supported, cantilever	
	44	Types of Beams: Overhanging and continuous beams	
	45	Types of Supports: Hinged, fixed supports.	
10TH	46	Types of Supports: types of reactions provided by each type of support.	
	47	Types of Beams: Simply supported, cantilever beams	
	48	Types of Beams: overhanging and continuous beams	
	49	Types of Beams: Simply supported, cantilever, overhanging and continuous beams	
	50	**SESSIONAL TEST - 2**	
11TH	51	Concept of bending moment	

	52	Concept of shear force
	53	Bending moment and shear force diagrams for simply supported subjected to point loads
	54	Bending moment and shear force diagrams for cantilever subjected to point loads
	55	Bending moment and shear force diagrams over hanging beams subjected to point loads
12TH	56	Bending moment and shear force diagrams for simply supported subjected to uniformly distributed loads
	57	Bending moment and shear force diagrams for cantilever subjected to uniformly distributed loads
	58	Bending moment and shear force diagrams for overhanging beams subjected to uniformly distributed loads only
	59	Calculation of location and magnitude of Max Bending moment and point of contraflexure
	60	Calculation of location and magnitude of Max Bending moment
13TH	61	Calculation of point of contraflexure
	62	Bending stresses in Beams
	63	Introduction: Tension, compression
	64	Simple Bending and assumption of Simple Bending Theory.
	65	Position of Neutral Axis
14TH	66	Section Modulus.
	67	Moment of Resistance.
	68	Application of flexure equation $(M/I = f/y = E/R)$
	69	Maximum and permissible bending stresses
	70	Analysis of Perfect Frames
15TH	71	Types of pin jointed frames.
	72	Assumptions in computing the forces in members of a perfect frame.
	73	Analysis of perfect frames by method of joints.
	74	Analysis of perfect frames by method of joints.
	75	**SESSIONAL TEST - 3**