Lesson Planning for the semester starting w.e.f. 8.01.2019

MKM Girls Polytechnic college (179) ,Hodal (District Palwal)

Name of the Faculty: Er. Jyoti Chaudhary (Theory)

Discipline: Architecture Assistantship

Semester: 4th

Subject: STRUCTURAL MECHANICS

Lesson Plan Duration: 15 weeks (from January, 2019 to April, 2019)

Work Load (Lecture/ Practical) per week (in hours): Lectures- 05

Week	Theory		Practical	
	Lecture day	**Topic (including assignment/ test)**	**Practical day**	**Topic**
1st	1st	Introduction to Force system and Equilibrium		
	2nd	Force: Definition, effect, characteristics, representation		
	3rd	types of forces		
	4th	Force Systems: Coplanar and Non coplanar force systems		
2nd	5th	Types of coplanar Forces: Collinear, Concurrent, Parallel, Non concurrent and Non parallel.		
	6th	Resultant force and components of a force		
	7th	Laws of forces: Parallelogram, Triangle and polygon Laws of forces		
	8th	Free Body Diagram, Lamis theorem (No proof)		
3rd	9th	Calculation of resultant of coplanar force systems		
	10th	Concept of Moment, Characteristics of		

		moment, resultant moment, Varignon's theorem (No proof)		
	11th	Concept of couple, moment of a couple		
	12th	Equilibrium of rigid bodies		
4th	13th	Assignment & revision of 1st Chapter		
	14th	Test of 1st Chapter		
	15th	Introduction to Centroid and Moment of Inertia		
	16th	Definition of centre of Gravity and Centroid		
5th	17th	Centroid by method of moments of areas for square, rectangular, triangular, L-shape, T-shape and I shape cross-sections.		
	18th	Moments of Inertia by methods of moments and Radius of Gyration		
	19th	Parallel axis theorem (no derivation)		
	20th	Moment of Inertia of rectangular section.		
6th	21st	Moment of inertia of a Triangular section (no derivation)		
	22nd	Moment of Inertia of a Circular section.		
	23th	Perpendicular Axis Theorem (no derivation)		
	24th	Numerical on moment of inertia of Rectangular, Triangular and Circular laminas only.		
7th	25th	Assignment & revision of 2nd Chapter		
	26th	Test of 2nd Chapter		
	27th	Introduction of Stress and Strain		
	28th	Elasticity, Elastic limit		
8th	29th	Definition of stress and strain		
	30th	Types of stress and strain		

	31st	Stress strain curve for mild steel		
	32nd	Hook's Law (Numerical)		
9th	33rd	Assignment & revision of 3rd Chapter		
	34th	Test of 3rd Chapter		
	35th	Introduction of Shear Force		
	36th	Introduction of Bending Moment		
10th	37th	Types of loads- Dead load, Live load, snow, wind and seismic loads as per IS: 875		
	38th	Types of loading: Point load, Uniformly distributed load and uniformly,varying load.		
	39th	Types of Supports: Hinged, fixed supports, types of reactions provided by each type of support		
	40th	Types of Beams: Simply supported, cantilever, overhanging and continuous beams (description only)		
11th	41st	Concept of bending moment and shear force.		
	42nd	Bending moment and shear force diagrams for simply supported, cantilever and over hanging beams subjected to point loads and uniformly distributed loads only		
	43rd	Calculation of location and magnitude of Max Bending moment and point of contraflexure		
	44th	Assignment & revision of 4th Chapter		
12th	45th	Test of 4th Chapter		
	46th	Introduction of Bending stresses in Beams		
	47th	Introduction: Tension, compression		

	48th	Simple Bending and assumption of Simple Bending Theory.		
13th	49th	Position of Neutral Axis.		
	50th	Section Modulus. Moment of Resistance. Application of flexure equation (M/I = f/y = E/R) (no derivation)		
	51st	Maximum and permissible bending stresses.		
	52nd	Assignment & revision of 5th Chapter		
14th	53rd	Test of 5th Chapter		
	54th	Introduction of Analysis of Perfect Frames		
	55th	Types of pin jointed frames		
	56th	Assumptions in computing the forces in members of a perfect frame.		
15th	57th	Analysis of perfect frames by method of joints.		
	58th	Analysis of perfect method of joints.		
	59th	Assignment & revision of 6th Chapter		
	60th	Test of 6th Chapter		