Discipline	Architectural Assistantship
Semester	4th
Subject	Structural Mechanics
Lesson Plan Duration	15 Weeks
**** Work Load (Lecture) per week (In Hours) : Lectures - 05**	

Week	Theory		Practical	
	Lecture Day	**Topic (including assignment / test)**	**Practical Day**	**Topic**
		Unit 1 Stress and Strain		
1st	1st	Introduction to Structural Mechanics,Definition : load, effects of load, classification of load, strength,Mechanical properties of material		
	2nd	Stress: definition, types,units,Important conversions for Stress		
	3rd	Strain: definition,types, units, volumetric , longitudinal,lateral strain, Hooke's Law, Elastic constants		
	4th	Stress- Strain Curve for Ductile Material(mild Steel) and stress-strain curve for HYSD bar and Brittle material,Ultimate stress, working stress, FOS,Breaking Stress,Yield stress		
	5th	Numericals on Stress & Strain		
2nd	6th	**Assignments given-I MCQ's, Assignments given - II Very short answers**		
	7th	**Test - I of Numericals , MCQ's &VSA**		
		Unit 2 Centroid and Moment Of Inertia		
	8th	Definition of centre of gravity and centroid, Centroidal Axes, Difference between C.G. and Centroid, Axis of reference		
	9th	Centroid of Plane Geometrical Figures and C.G.of regular solids		
	10th	Centroid by method of moments of areas for Square, Rectangular, Triangular, L-shape, T-shape and I shape cross-sections		
	11th	Numericals on finding the position of centroid		
	12th	Moments of Inertia, Second Moment of Area, Radius of Gyration, Minimum radius of Gyration, Section Modulus		

3rd	13th	Theorem of Parallel Axis, Theorem of perpendicular Axis, Definition of Polar M.O.I.		
	14th	M.O.I. of Plance figures (rectangle, triangle and circular section)		
	15th	Numericals on finding MOI		
4th	16th	Ist Sessional week		
	17th			
	18th			
	19th			
	20th			
5th	21st	**Assignments given-I MCQ's, Assignments given - II Very short answers**		
	22nd	**Test - I of Numericals , MCQ's &VSA**		
	Unit 3 Shear Force and Bending Moment			
	23rd	Types of : Beams, Supports, loads,		
	24th	Shear Force- definition, sign convention,SFD Bending moment- Definition,sign convention, BMD		
	25th	Numerical of S.F.D and B.M.D of Cantilever Beam for point load at its Free End .		
6th	26th	Numerical of S.F.D and B.M.D of Cantilever Beam for point load at various other point.		
	27th	Numerical of S.F.D and B.M.D of Cantilever Beam for entire U.D.L .		
	28th	Numerical of S.F.D and B.M.D of Cantilever Beam for U.D.L with point Load		
	29th	Numerical of S.F.D and B.M.D of simply supported beam for point load at Mid Span		
	30th	Numerical of S.F.D and B.M.D of simply supported beam for point load at any other position		
7th	31st	Numerical of S.F.D and B.M.D of simply supported beam for entire U.D.L .		
	32nd	Numerical of S.F.D and B.M.D of simplysupported beam for U.D.L . And point load.		
	33rd	Numerical of S.F.D and B.M.D of overhanging beam for entire U.D.L .		
	34th	Numerical of S.F.D and B.M.D of overhanging beam for U.D.L . And point load.		

	35th	**Assignments given-I MCQ's, Assignments given - II Very short answers**		
8th	36th	**Test - I of Numericals , MCQ's &VSA**		
	Unit -4 Bending Stresses in Beams			
	37th	Bending stress,simple bending,Neutral Axis,Position of NA, MoR, Section modulus,Assumption in theory of Pure Bending,		
	38th	Bending Equation, its application,Calculation of Bending Stress in Simply Supported beams & cantilever beams		
	39th	**Assignments given-I MCQ's, Assignments given - II Very short answers**		
	40th	**Test - I of Numericals , MCQ's &VSA**		
9th	41st	IInd Sessional week		
	42nd			
	43rd			
	44th			
	45th			
	Unit -5 Force System and Equilibrium			
10th	46th	Definition, effects, characteristics,representation types		
	47th	Force systems;types of coplanar forces;components & resultant of forces;		
	48th	law of forces- Triangular, polygon,parallelogram,		
	49th	Concept of -moment; characteristics;resultant		
	50th	Concept of- couple; moment of couple; Equilibrium of rigid bodies		
11th	51st	Calculation of resultant of coplanar forces		
	52nd	Lamis theorem; Varigon's theorem		
	53rd	Calculation of resultant of coplanar forces		
	54th	**Assignments given-I MCQ's, Assignments given - II Very short answers**		
	55th	**Test - I of Numericals , MCQ's &VSA**		
	Unit -6 Analysis of Perfect Frames			
12th	56th	Define of -Frames,types;types of supports,		
	57th	Assumption in computing the forces in memebers of a perfect frame		
	58th	Analysis of perfect frames by method of joints		

12th	59th	**Assignments given-I MCQ's, Assignments given - II Very short answers**		
	60th	**Test - I of Numericals , MCQ's &VSA**		
13th	61st	IIIrd Sessional week		
	62nd			
	63rd			
	64th			
	65th			
14th	66th	Revision of Unit I		
	67th	Revision of Unit II		
	68th	Revision of Unit III		
	69th	Revision of Unit IV		
	70th	Revision of Unit V		
15th	71st	Revision of Unit VI		
	72nd	Revision based on previous question papers		
	73rd	Revision based on previous question papers		
	74th	Revision based on previous question papers		
	75th	Revision based on previous question papers		