CDL State Institute of Engineering and Technology
Panniwala Mota (Sirsa)
Mechanical Engineering Department
Lesson Plan

Name of Faculty : Kamal Kumar, Assistant Professor
Discipline : Mechanical Engineering
Semester : 4th (ME)
Subject : **PCC-ME-207 T, Mechanics of Solids - II**
Lesson Plan Duration: 15 weeks (from March, 2022 to June, 2022)
Work Load (Lectutre/Practical) per week (in hours): **Lectures 04 hours**

Week	Theory		Practical	
	Lecture Day	Topic (Including Assignment/Test)	Practical Day	Topic
Unit-I : Thin Pressure Vessels , Thick Cylinders & Spheres				
1st	1	Introduction to subject and basic terms like Cylinders and Spheres, Stress, Strain, Force and Pressure etc. What is Longitudinal Stress & Strain and Hoop stress & strain		NA
	2	Concept of Internal Pressure in Thin Cylindrical and Spherical vessels		
	3	Problems and solutions		
	4	Hoop and Longitudinal Stresses and strains in Thin Cylindrical Vessels under internal pressure		
2nd	5	Hoop and Longitudinal Stresses and strains in Thin Spherical Vessels under internal pressure		NA.
	6	Problem and solutions		
	7	Wire Wound thin Cylinders, Derivation of Lame's Equations		
	8	Problem and solutions		
3rd	9	Radial and hoop stresses and strains in thick and compound cylinders under internal pressure		NA.
	10	Problems and solutions		
	11	Problems and solutions		
	12	Radial and hoop stresses and strains in thick spherical shells subjected to internal fluid pressure		
4th	13	Problems and solutions		NA
	14	Wire wound Thick Cylinders		
	15	Problems and solutions		
	16	Hub Shrunk on Solid Shaft		
Unit-II : Rotating Rims & Discs , Beam Columns				
5th	17	Stresses in uniform rotating rings and discs		NA
	18	Concept of Rotating Discs of uniform stength		
	19	Problem and solutions		
	20	Stresses in rotating rims neglecting the effect of spokes		
6th	21	Stresses in rotating cylinders , Hollow cylinders & solids cylinders		NA
	22	Problems and solutions		
	23	Beam columns subjected to Single concentrated load , Number of concentrated loads		
	24	Beam columns subjected to Continuous lateral load		

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7th		**1st Minor Test**		
8th	25	Problems and solutions		NA
	26	Concept of End couple		
	27	Couple at both ends triangular loads		
	28	Problem and solutions		
Unit-III : Strain Energy & Impact Loading , Springs				
9th	29	Definition and expression for strain energy stored in a body when load is applied Gradually, Suddenly and with impact		NA
	30	Problems and solutions		
	31	Strain energy of beams in bending , Beam Deflections		
	32	Strain energy of shafts in twisting		
10th	33	Energy methods in determining spring deflection, Castigliano's & Maxwell Theorems		NA
	34	Problems and solutions		
	35	Stresses in open coiled helical spring subjected to axial loads and twisting couples		
	36	Leaf springs, Flat springs , Concentric Springs		
Unit- :IV Slope & Deflection, Theories of Elastic Failure				
11th	37	Conceopt of Slope and Deflection		NA
	38	Relationship between bending moment, slope and deflection		
	39	Calculation for Slope and Deflection using integration method.		
	40	Macaulay's and area moment methods of Cantilevers and simply supported beams with or without overhang.		
12th	41	Problems and solutions		NA
	42	Macaulay's and area moment methods of fixed beams under concentrated loads and uniformly distributed loads		
	43	Problems and solutions		
	44	Macaulay's and area moment methods of fixed beams under combination of Concentrated loads & Uniformly distributed loads		
13th	45	Varying Loads and application of moments, propped beams, sinking of prop		NA
	46	Problems and solutions		
	47	Continuous Beams		
	48	Derivation and Graphical Representations of Elastic Failure		
14th	**2ndMinor Test**			
15th	49	Aplication to problems of 2-dimensional stresss system with Combined Direct loading and Bending		NA
	50	Problems and solutions		
	51	Aplication to problems of 2-dimensional stresss system with Combined torisonal and Direct loading.		
	52	Problems and solutions		

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