Name of the Institute:	C. V. Raman Polytechnic
Department:	Mechanical Engineering
Semester/Division/Branch:	3rd Sem/ME
Subject Name with code:	Strength of Materials(Th2)
Total No. of Class (Required):	60
Faculty Name:	Dr. Brundaban Sahoo

Class No.	*Brief description of the Topic/Chapter to be taught*	**Remarks**
1	Types of load, stresses & strains,(Axial and tangential)	
2	Hooke's law, Young's modulus, bulk modulus, modulus of rigidity	
3	Hooke's law, Young's modulus, bulk modulus, modulus of rigidity	
4	Poisson's ratio, derive the relation between three elastic constants	
5	Principle of super position, stresses in composite section	
6	Temperature stress, determine the temperature stress in composite bar (single core)	
7	Temperature stress, determine the temperature stress in composite bar (single core)	
8	Strain energy and resilience, Stress due to gradually applied, suddenly applied and impact load	
9	Simple Numericals.	
10	Definition of hoop and longitudinal stress, strain	
11	Derivation of hoop stress, longitudinal stress, hoop strain	
12	Longitudinal strain and volumetric strain	
13	Numericals on above	
14	Computation of the change in length, diameter and volume	
15	Simple problems on above	
16	Two dimensional stress systems	
17	Determination of normal stress, shear stress and resultant stress on oblique plane	
18	Determination of normal stress, shear stress and resultant stress on oblique plane	
19	Location of principal plane and computation of principal stress	
20	Location of principal plane and computation of principal stress	
21	Maximum shear stress using Mohr's circle	
22	Maximum shear stress using Mohr's circle	
23	Numericals on above	
24	Numericals on above	
25	Types of beam and load	
26	Types of beam and load	
27	Concepts of Shear force and bending moment	
28	Concepts of Shear force and bending moment	
29	Shear Force and Bending moment diagram and its salient features illustration in cantilever beam for point load	

30	Shear Force and Bending moment diagram and its salient features illustration in cantilever beam for uniformly distributed load	
31	Shear Force and Bending moment diagram for simply supported beam for point load	
32	Shear Force and Bending moment diagram for simply supported beam for uniformly distributed load	
33	Shear Force and Bending moment diagram for over hanging beam under point load	
34	Shear Force and Bending moment diagram for over hanging beam under uniformly distributed load	
35	Assumptions in the theory of bending	
36	Bending equation derivation	
37	Moment of resistance, Section modulus& neutral axis.	
38	Simple problems on above	
39	Simple problems on above	
40	Simple problems on above	
41	Simple problems on above	
42	Define column	
43	Axial load, Eccentric load on column,	
44	Axial load, Eccentric load on column,	
45	Direct stresses, Bending stresses	
46	Maximum& Minimum stresses.	
47	Numerical problems on above.	
48	Numerical problems on above.	
49	Buckling load computation using Euler's formula	
50	Numerical problems on above.	
51	Columns with various end conditions	
52	Columns with various end conditions	
53	Assumption of pure torsion	
54	The torsion equation for solid and hollow circular shaft	
55	Numerical problems on above.	
56	Numerical problems on above.	
57	Numerical problems on above.	
58	Comparison between solid and hollow shaft subjected to pure torsion	
59	Numerical problems on above.	
60	Numerical problems on above.	

Signature of Faculty

HOD