

Semester: 3rd
 No. of periods per week: 4
 End semester exam: 80
 Total Marks : 100

Department: Mechanical Engineering
 Subject: Strength of Material
 Total Periods: 60
 Class test: 20

Sl.No.	Week	Period	Topic to be covered
1.	1 st	1 st	Types of load, stresses & strains,(Axial and tangential) Hooke's law, Young's modulus, bulk modulus, modulus of rigidity,Poisson's ratio, derive the relation between three elastic constants,
2.		2 nd	Do
3.		3 rd	Do
4.		4 th	Principle of super position, stresses in composite section
5.	2 nd	1 st	Temperature stress, determine the temperature stress in composite bar (single core)
6.		2 nd	Strain energy and resilience, Stress due to gradually applied, suddenly applied and impact load
7.		3 rd	Do
8.		4 th	Simple problems on above.
9.	3 rd	1 st	Do
10.		2 nd	Do
11.		3 rd	Definition of hoop and longitudinal stress, strain
12.		4 th	Do
13.	4 th	1 st	Derivation of hoop stress, longitudinal stress, hoop strain, longitudinal strain and volumetric strain
14.		2 nd	Do
15.		3 rd	Computation of the change in length, diameter and volume
16.		4 th	Simple problems on above
17.	5 th	1 st	Do
18.		2 nd	Do
19.		3 rd	Determination of normal stress, shear stress and resultant stress on oblique plane
20.		4 th	Do
21.	6 th	1 st	Do
22.		2 nd	Location of principal plane and computation of principal stress
23.		3 rd	Do
24.		4 th	Do
25.	7 th	1 st	Location of principal plane and computation of principal stress and Maximum shear stress using Mohr's circle
26.		2 nd	Do
27.		3 rd	Do
28.		4 th	Do
29.	8 th	1 st	Types of beam and load
30.		2 nd	Do
31.		3 rd	Concepts of Shear force and bending moment
32.		4 th	Do
33.	9 th	1 st	Shear Force and Bending moment diagram and its salient features illustration in cantilever beam, simply supported beam and over hanging beam under point load and uniformly distributed load
34.		2 nd	Do
35.		3 rd	Do
36.		4 th	Do
37.	10 th	1 st	Do
38.		2 nd	Do

39.		3 rd	Assumptions in the theory of bending,
40.		4 th	Do
41.	11 th	1 st	Bending equation, Moment of resistance, Section modulus & neutral axis.
42.		2 nd	Do
43.		3 rd	Do
44.		4 th	Solve simple problems.
45.	12 th	1 st	Do
46.		2 nd	Do
47.		3 rd	Do
48.		4 th	Do
49.	13 th	1 st	Define column, Axial load, Eccentric load on column,
50.		2 nd	Do
51.		3 rd	Direct stresses, Bending stresses, Maximum & Minimum stresses. Numerical problems on above.
52.		4 th	Do
53.	14 th	1 st	Buckling load computation using Euler's formula (no derivation) in Columns with various end conditions
54.		2 nd	Do
55.		3 rd	Assumption of pure torsion
56.		4 th	The torsion equation for solid and hollow circular shaft
57.	15 th	1 st	Do
58.		2 nd	Do
59.		3 rd	Comparison between solid and hollow shaft subjected to pure torsion
60.		4 th	Do