

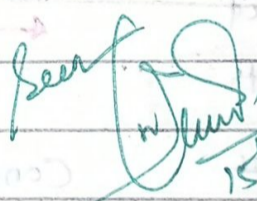
DISCIPLINE: CIVIL	SEMESTER- 3 rd	NAME OF THE TEACHING FACULTY En. Rameshwar B. S. V. P.
SUBJECT: STRUCTURAL MECHANICS	NO OF DAYS / WEEK CLASS ALLOTTED - 6	SEMESTER FROM: 15.09.2022 to 22.12.2022
WEEKS	CLASS DAY	NO. OF WEEKS: 15 THEORY
12.09.2022 TO 17.09.2022	1 st 2 nd 3 rd 4 th 5 th	Basic Principle of Mechanic: force, moment, support conditions, conditions of equilibrium.
19.09.2022 TO 24.09.2022	6 th 1 st 2 nd 3 rd 4 th	BISWA KARMA PUJA C.G of different section. M.I of different section, free body diagram. Introduction to stresses and strains. Mechanical properties of materials: Rigidity, elasticity, plasticity, compressibility, Hardness, toughness, stiffness, Brittleness, Ductility, malleability, creep, fatigue, tenacity, Durability.
	5 th 6 th	Continuing - - Types of stress - Tensile, compressive and shear strains.
26.09.2022 TO 1.10.2022	1 st 2 nd 3 rd 4 th	Types of strain - Tensile, compressive and shear strains. Complimentary shear stress - Diagonal tensile / Compressive stresses due to shear, elongation and contraction, longitudinal and lateral strains, poisson's ratio, volumetric strain, computation of stress, strain, poisson's ratio, change in dimensions and volume. Hook's Law - Elastic constants.

Week	class day	THEORY
	5 th	Derivation of relationship between the elastic constants.
	6 th	Continuing - - -
03.10.2022	1 st	
TD	2 nd	
08.10.2022	3 rd	
	4 th	
	5 th	
	6 th	
	1 st	Numericals of stress and strain.
	2 nd	Numericals of stress and strain.
10.10.2022	3 rd	Behaviour of ductile and brittle materials under direct loads.
TD		
15.10.2022	4 th	Stress-strain curve of a ductile material.
	5 th	Limit of proportionality, elastic limit, yield stress, ultimate stress, breaking stress.
	6 th	percentage elongation, percentage reduction in area, significance of percentage elongation and reduction in area of cross section.
	1 st	Deformation of prismatic bars due to uniaxial load.
	2 nd	Deformation of prismatic bars due to its self weight.
	3 rd	Numericals of application of stress & strain
	4 th	Principal stresses and strains: occurrence of normal and tangential stresses, concept of principal stress and principal planes, max and

Week	Class day	Theory
		minor principal stress and their orientations.
	5 th	Mohr's circle and its application to solve problems of complex stresses.
	6 th	Numericals of complex stress.
	1 st	DRWALD
24.10.2022	2 nd	Stresses in beam due to bending.
TO	3 rd	Shear stresses in beams.
29.10.2022	4 th	Stresses in shafts due to torsion, combined bending and direct stresses.
	5 th	column and strut, end conditions
	6 th	Equivalent length, slenderness ratio.
	1 st	Euler's Theory of long columns, critical load for columns with different end conditions.
31.10.2022		
TO		
05.11.2022	2 nd	Types of Loads, shear force & Bending Moment.
	3 rd	Types of beams, Types of supports.
	4 th	Signs convention for SF and BM.
	5 th	SF and BM diagrams for cantilevers.
	6 th	Numericals.
	1 st	LAST MONDAY OF KARTIKA
07.11.2022	2 nd	RASHA PURNIMA
TO	3 rd	SF and BM diagrams for simply supported beam and over hanging beam.
12.11.2022	4 th	Numericals
	5 th	Position of maximum BM, point of contraflexure
	6 th	Relation between intensity of load, SF and BM

Week	Class days	Theory
14.11.2022 TO 19.11.2022	1 st 2 nd 3 rd 4 th 5 th	slope and deflection, elastic curve. Relationship between slope, deflection and curvature. PRATHAMASTAM I Importance of slope and deflection slope and deflection of cantilever and simply supported beams under concentrated and uniformly distributed load (by double integration method) Continuing...
21.11.2022 TO 26.11.2022	6 th 1 st 2 nd 3 rd 4 th 5 th 6 th	Macaulay's Method Numericals of slope and deflection Numericals of slope and deflection Numericals of slope and deflection Indeterminacy of beams. principle of consistent deformation/compatibility.
28.11.2022 TO 03.12.2022	1 st 2 nd 3 rd 4 th 5 th 6 th	Analysis of propped cantilever Fixed and two span continuous beams by principle of superposition SF and BM diagrams (point load and UDL covering full span) of indeterminate beams. Types of trusses, statically determinate and indeterminate trusses. Numerical of truss. degree of indeterminacy.

Week	class day	Theory
05.12.2022	1 st	Degree of indeterminacy (numericals)
TO	2 nd	Degree of indeterminacy (numericals)
10.12.2022	3 rd	stable and unstable trusses.
	4 th	LAST THURSDAY OF MARCASIRA
	5 th	Types and Advantages of trusses.
	6 th	Analysis of trusses (method of joints)
	1 st	Numericals of trusses
12.12.2022	2 nd	Numericals of trusses
TO	3 rd	Analysis of trusses (method of section)
17.12.2022	4 th	problem practice on SF & BM
	5 th	problem practice on SF & BM.
	6 th	slope and Deflection problem practice
19.12.2022	1 st	slope and deflection problem practice.
TO	2 nd	PVQ practice
22.12.2022	3 rd	PVQ Practice
	4 th	PVQ Practice

Seen

 15/09/2022

The closing of attendance has been extended upto
 22.01.2023 by SCTE & VT as per council notice no. 2117 dt.
 09.12.2022