

BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF MECHANICAL ENGINEERING



LESSON PLAN

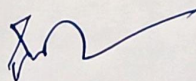
SUBJECT: STRENGTH OF MATERIALE (TH 2)

FACULTY: PRABIR KUMAR SWAIN

ACCADEMIC SESSION: 2023-24
SEMESTER: 3RD
SEC: B

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Discipline: Mechanical Engineering	Semester: 3rd B		Name of the teaching faculty: PRABIR KUMAR SWAIN
Subject: Strength of materials	No. of Days/ per week class allotted: 04 periods per week Mon-1 period, Tue-1 period, fri-1 period, sat-1 period)		Semester From Date: 01-08-2023 To Date: 30-11-2023 No. of weeks: 14 weeks
Week	Class Day	No of period available	Theory Topics
1 ST	01/08/2023	1	Introduction to strength of material and syllabus discussion
	04/08/2023	1	1.1 load and types of load
	05/08/2023	1	stress and types of stress strain and types of strain
2 nd	07/08/2023	1	Hooke's law , Young's modulus, bulk modulus , modulus of rigidity Poisson's ratio and some numerical on stress and strain
	08/08/2023	1	, Derivation of relation between E , C and μ . And its numerical Derivation of relation between E , K and μ . And its numerical
	11/08/2023	1	Derivation of relation between E , K and C and its numerical 1.2 Principles of superposition And its numerical
	12/08/2023	1	Stress in composite section and its numerical



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	14/08/2023	1	Numerical of composite section
	18/08/2023	1	1.3 Temperature stress and its Simple numerical
3rd	19/08/2023	1	Temperature stress in Composite bar(single core) and numerical
4TH	21/08/2023	1	Numerical of thermal stress in composite bar
	22/08/2023	1	1.4 Introduction of stress strain curve ,Strain energy , resilience, Toughness
	25/08/2023	1	Stress due to gradually applied load, suddenly applied load and impact load
	26/08/2023	1	1.5 Numericals of strain energy and numerical of above chapter
5TH	28/08/2023	1	PREVIOUS YEAR SEMESTER QUESTION DISCUSSION
	29/08/2023	1	CLASS TEST
	01/09/2023	1	2.1 Definition of Thin cylinder , hoop stress and longitudinal stress, hoop strain and longitudinal strain under internal pressure 2.2 Derivation of hoop stress, longitudinal stress, hoop strain ,longitudinal strain and volumetric strain. Of thin cylinder under internal pressure
	02/09/2023	1	2.3 Derivation of hoop stress, longitudinal stress, hoop strain ,longitudinal strain and volumetric strain Of spherical shell And Computation of the In length, diameter and volume of spherical shell

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	04/09/2023	1	Numerical of thin cylinder under internal pressure
	05/09/2023	1	Numerical of spherical shell under internal pressure
	08/09/2023		
	09/09/2023		
7TH	11/09/2023	1	Previous year semester question discussion
	12/09/2023	1	CLASS TEST
	15/09/2023	1	Assumption of pure Torsion 7.1 The torsion equation for solid Shaft. And Torsion equation for hollow Shaft.
	16/09/2023	1	Comparison between solid cylinder and hollow cylinder. And numerical of TORSION Numerical of torsion
	18/09/2023	1	Previous year question discussion
8TH	22/09/2023	1	3.1Determination of normal stress, shear stress and resultant stress on oblique plane under uniaxial loading Determination of normal stress, shear stress and resultant stress on oblique plane under biaxial loading
	23/09/2023	1	Determination of normal stress, shear stress and resultant stress on oblique plane under shear loading. Determination of normal stress, shear stress and resultant stress on oblique plane under combined loading

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9TH	25/09/2023	1	Numerical of above case under combined loadin
	26/09/2023	1	Numerical of above case under combined loading And Location of principal plane and computation of principal stress
	30/09/2023	1	Numerical of above case under combined loading Location of principal plane and computation of principal stress
10TH	03/10/2023	1	Mohr's circle
	06/10/2023	1	CLASS TEST
	07/10/2023	1	4.1 Types of beam, types of support and types of load
11TH	09/10/2023	1	4.2 Concepts of Shear force and bending moment
	10/10/2023	1	4.3 Shear Force and Bending moment diagram of simple supported beam under point load AND its numerical
	13/10/2023	1	Shear Force and Bending moment diagram of simple supported beam under UDL .and numerical
	14/10/2023	1	Shear Force and Bending moment diagram of cantilever beam under point load. And its numerical
12TH	16/10/2023	1	Shear Force and Bending moment diagram of cantilever beam under UDL and its numerical
	17/10/2023	1	Shear Force and Bending moment diagram of overhanging beam under point load and its numerical
	20/10/2023	1	Numerical of simple supported beam under combined load
13TH	30/10/2023	1	Previous year question discussion of SFD and BMD

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	31/10/2023	1	5.1 Assumptions in the theory Of simple bending. 5.2 Derivation of simple Bending Equation
	03/11/2023	1	Moment of resistance, Section modulus & neutral axis and Numerical of simple bending.
	04/11/2023	1	Numerical of simple bending
	06/11/2023	1	Previous year question discussion of simple bending
14TH	07/11/2023	1	6.1 Define column 6.2 Axial load, Eccentric load on Column. 6.3 Direct stresses, Bending stresses, Maximum & Minimum stresses
	10/11/2023	1	6.4 Buckling load computation using Euler's formula (no derivation) in Columns with various end conditions
	11/11/2023	1	Numerical on buckling load with various end conditions
	13/11/2023	1	Previous year semester question discussion of column and buckling load
	14/11/2023	1	Revision
15TH	17/11/2023	1	Revision
	18/11/2023	1	Revision
	20/11/2023	1	Revision
	21/11/2023	1	Revision
16TH	24/11/2023	1	Revision
	25/11/2023	1	Mock test