

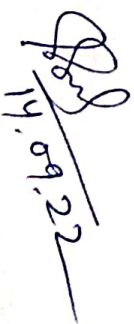
BHUBANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF MECHANICAL ENGINEERING



LESSON PLAN

SUBJECT: STRENGTH OF MATERIAL (TH 2)
FACULTY: PRABIR KUMAR SWAIN

ACCADEMIC SESSION: 2022-23
SEMESTER: 3RD
SEC: B


14.09.22

BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF CIVIL ENGINEERING
LESSON PLAN

Discipline: Mechanical Engineering		Semester: 3 rd B		Name of the teaching faculty: PRABIR KUMAR SWAIN	
Subject: Strength of material		No. of Days/ per week class allotted: 04 periods per week Mon-1 period, Tue-1 period, Wed-1 period, Fri -1 period)		Semester From Date: 15-09-2022 To Date: 23-12-2022 No. of weeks: 14 weeks	
Week	Class Day	No of period available	Theory Topics		
1ST	16/09/2022	1	Introduction to strength of material and syllabus discussion		
	19/09/2022	1	1.1 load and types of load		
	20/09/2022	1	stress and types of stress strain and types of strain		
2ND	21/09/2022	1	Hooke's law , Young's modulus, bulk modulus , modulus of rigidity Poisson's ratio and some numerical on stress and strain		
	23/09/2022	1	Derivation of relation between E, C and μ . And its numerical Derivation of relation between E, K and μ . And its numerical		
3RD	26/09/2022	1	Derivation of relation between E, K and C and its numerical 1.2 Principles of superposition And its numerical		

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	27/09/2022	1	Stress in composite section and its numerical
	28/09/2022	1	Numerical of composite section
	30/09/2022	1	1.3 Temperature stress and its Simple numerical
	10/10/2022	1	Temperature stress in Composite bar(single core) and numerical
	11/10/2022	1	Numerical of thermal stress in composite bar
4TH	12/10/2022	1	1.4 Introduction of stress strain curve , Strain energy , resilience, Toughness
	14/10/2022	1	Stress due to gradually applied load, suddenly applied load and impact load
	17/10/2022	1	1.5 Numericals of strain energy and numerical of above chapter
	18/10/2022	1	PREVIOUS YEAR SEMESTER QUESTION DISCUSSION
	19/10/2022	1	CLASS TEST
5TH	21/10/2022	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

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6TH	25/10/2022	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
	26/10/2022	1	Numerical of thin cylinder under internal pressure
	28/10/2022	1	Numerical of spherical shell under internal pressure
7TH	31/10/2022	1	Previous year semester question discussion
	01/11/2022	1	CLASS TEST
	02/11/2022	1	Assumption of pure Torsion 7.1 The torsion equation for solid Shaft. And Torsion equation for hollow Shaft.
	04/11/2022	1	Comparison between solid cylinder and hollow cylinder. And numerical of TORSION
	07/11/2022	1	Numerical of torsion Previous year question discussion
8TH	09/11/2022	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
	11/11/2022	1	Determination of normal stress, shear stress and resultant stress on oblique plane under shear loading.

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			Determination of normal stress, shear stress and resultant stress on oblique plane under combined loading
	14/11/2022	1	Numerical of above case under combined loading
	15/11/2022	1	Numerical of above case under combined loading And Location of principal plane and computation of principal stress
9TH	16/11/2022	1	Numerical of above case under combined loading Location of principal plane and computation of principal stress
	18/11/2022	1	Mohr's circle
	21/11/2022	1	INTERNAL ASSESSMENT
	22/11/2022	1	4.1 Types of beam, types of support and types of load
10TH	23/11/2022	1	4.2 Concepts of Shear force and bending moment
	25/11/2022	1	4.3 Shear Force and Bending moment diagram of simple supported beam under point load AND its numerical
	28/11/2022	1	Shear Force and Bending moment diagram of simple supported beam under UDL and numerical
	29/11/2022	1	Shear Force and Bending moment diagram of cantilever beam under point load. And its numerical
11TH	30/11/2022	1	Shear Force and Bending moment diagram of cantilever beam under UDL and its numerical

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	02/12/2022	1	Shear Force and Bending moment diagram of overhanging beam under point load and its numerical
	05/12/2022	1	Numerical of simple supported beam under combined load
	06/12/2022	1	Previous year question discussion of SFD and BMD
	07/12/2022	1	5.1 Assumptions in the theory Of simple bending. 5.2 Derivation of simple Bending Equation
12TH	09/12/2022	1	Moment of resistance, Section modulus & neutral axis. and Numerical of simple bending.
	12/12/2022	1	Numerical of simple bending
	13/12/2022	1	Previous year question discussion of simple bending
	14/12/2022	1	6.1 Define column
13TH	16/12/2022	1	6.2 Axial load, Eccentric load on Column.
	19/12/2022	1	6.3 Direct stresses, Bending stresses, Maximum & Minimum stresses
	20/12/2022	1	6.4 Buckling load computation using Euler's formula (no derivation) in Columns with various end conditions
	21/12/2022	1	Numerical on buckling load with various end conditions Previous year semester question discussion of column and buckling load
14TH	23/12/2022	1	Revision