

**BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF MECHANICAL ENGINEERING**



LESSON PLAN

**SUBJECT: DESIGN OF MACHINE ELEMENT (TH-2)
FACULTY: PRIYADARSINI MALLICK**

**ACADEMIC SESSION: 2024-25
SEMESTER: 5TH
SECTION-B**

H O D (Mechanical Engg.)

Priyadarsini Mallik

[Signature]
HOD

BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN

Discipline- Mechanical Engg	Semester :- 5 th Sec-B		Name of the teaching faculty :- Priyadarshini Mallick
Subject- Design of Machine Elements	No of periods Allotted per Week- 04 (Tuesday Thursday Saturday)	No. of Weeks: 18	Semester from Date - 01/07/2024 To Date - 08/11/2024
Week	Class	No Of Periods available	Theory Topics
1st	02/07/2024	1	1.1 Introduction to Machine Design and Classify it.
	04/07/2024	1	1.2 Different mechanical engineering materials used in design with their uses and their mechanical and physical properties.
	06/07/2024	2	1.3.1 Define working stress, yield stress, ultimate stress & factor of safety
2nd	09/07/2024	1	1.3.2 stress -strain curve for M.S
	11/07/2024	1	1.3.3 stress -strain curve for C.I.
	13/07/2024	2	1.4 Modes of Failure (By elastic deflection, general yielding & fracture)
3rd	16/07/2024	1	1.5 State the factors governing the design of machine elements.
	18/07/2024	1	2.1 Joints and their classification..
	20/07/2024	2	2.2 State types of welded joints
			2.3 State advantages of welded joints over other joints
	23/07/2024	1	2.4.1 Assumptions & Procedure for Designing welded joint during eccentric loading.
4th	25/07/2024	1	2.4.2 Design of welded joints for eccentric loads.
	27/07/2024	2	SOLVE NUMERICALS ON CH-2.4
	30/07/2024	1	2.5 State types of riveted joints and types of rivets.

BHUBANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF MECHANICAL ENGINEERING
LESSON PLAN

	01/08/2024	1	2.6.1 Failure of riveted joints due to Tearing of Plates
	03/08/2024	2	2.6.2 Failure of Riveted joint due to Shearing 2.6.3 Failure of Riveted joint due to Crushing
	06/08/2024	1	SOLVE NUMERICALS ON CH-2.6
6th	08/08/2024	1	2.7 Determine strength & efficiency of riveted joints
	10/08/2024	2	SOLVE NUMERICALS ON CH-2.7
	13/08/2024	1	2.8.1 Steps required to Design riveted joints for pressure vessel
7th	17/08/2024	2	2.8.2 Design riveted joints for pressure vessel.
	20/08/2024	1	SOLVE NUMERICALS ON CH-2.8
	22/08/2024	1	CLASS TEST-1
8th	24/08/2024	2	3.1 State function of shafts. 3.2 State materials for shafts
	27/08/2024	1	3.3 Design solid & hollow shafts to transmit a given power at given rpm based on a) Strength: (i) Shear stress, (ii) Combined bending tension;
	29/08/2024	1	SOLVE NUMERICALS ON CH-3.3 a
9th	31/08/2024	2	3.3 Design solid & hollow shafts to transmit a given power at given rpm based on b) Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity
	03/09/2024	1	SOLVE NUMERICALS ON CH-3.3 b
	05/09/2024	1	3.4 State standard size of shaft as per I.S.
10th	07/09/2024	2	3.5 State function of keys, types of keys & material of keys. 3.6 Describe failure of key, effect of key way.
	10/09/2024	1	3.7 Design rectangular sunk key considering its failure against shear & crushing.

BHUBANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF MECHANICAL ENGINEERING
LESSON PLAN

12 TH	12/09/2024	1	SOLVE NUMERICALS ON CH-3.7
	14/09/2024	2	3.8 Design rectangular sunk key by using empirical relation for given diameter of shaft. SOLVE NUMERICALS ON CH-3.8
13 TH	17/09/2024	1	3.9 State specification of parallel key, gib-head key, taper key as per I.S.
	19/09/2024	1	4.1 Design of Shaft coupling
	21/09/2024	2	4.2 Requirements of a good shaft coupling
	24/09/2024	1	4.3 Types of Coupling. 4.4.1 Procedure for Designing Sleeve or Muff-Coupling. 4.4.2 Design of Sleeve or Muff-Coupling.
14 TH	26/09/2024	1	SOLVE NUMERICALS ON CH-4.4
	28/09/2024	2	4.5 Design of Clamp or Compression Coupling.
	01/10/2024	1	SOLVE NUMERICALS ON CH-4.5
15 TH	03/10/2024	1	5.1 Materials used for helical spring.
	05/10/2024	2	5.2 Standard size spring wire. (SWG).
	15/10/2024	1	5.3 Terms used in compression spring
16 TH	17/10/2024	1	5.4 Stress in helical spring of a circular wire.
	19/10/2024	2	5.5 Deflection of helical spring of circular wire
	22/10/2024	1	SOLVE NUMERICALS ON CH-5.5
	24/10/2024	1	SOLVE NUMERICALS ON CH-5.5
	26/10/2024	2	5.6 Surge in spring.

Handwritten signature

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

17TH	29/10/2024	1	5.7 Solve numerical on design of closed coil helical compression spring.
	02/11/2024	2	CLASS TEST-2
18TH	05/11/2024	1	REVISION
	07/11/2024	1	REVISION

Shree