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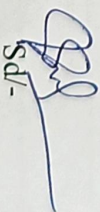## DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN

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

FACULTY: **PRIYADARSINI MALLICK**

ACADEMIC SESSION: **2024-25**

SEMESTER: **5TH**

SECTION-A

Sd/-

H O D (Mechanical Engg.)

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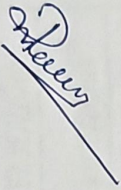## DEPARTMENT OF MECHANICAL ENGINEERING
LESSON PLAN

Discipline- Mechanical Engg	Semester :- 5th		Name of the teaching faculty :- Priyadarsini Mallick	
Subject- Design of Machine Elements	No of periods Allotted per Week- 04 (Monday Wednesday Thursday Friday)		Semester from Date - 01/07/2024 To Date - 08/11/2024 No. of Weeks: 18	
Week	Class	No Of Periods available	Theory Topics	
1st	01/07/2024	1	1.1.1 Introduction to Machine Design	
	03/07/2024	1	1.1.2 Classify Machine Design	
	04/07/2024	1	1.2.1 Different mechanical engineering materials used in design with their uses	
	05/07/2024	1	1.2.2physical properties and mechanical properties engineering materials.	
2nd	08/07/2024	1	1.3.1 Define working stress, yield stress, ultimate stress & factor of safety	
	10/07/2024	1	1.3.2 stress –strain curve for Mild Steel	
	12/07/2024	1	1.3.3 stress –strain curve for C.I.	
	13/07/2024	1	1.4.1 Modes of Failure (By elastic deflection.)	
3rd	15/07/2024	1	1.4.2 Failure By general yielding & fracture	
	18/07/2024	1	1.5 State the factors governing the design of machine elements.	
	19/07/2024	1	2.1 Joints and their classification..	
4th	22/07/2024	1	2.2 State types of welded joints	
	24/70/2024	1	2.3 State advantages of welded joints over other joints.	

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Week	Date	Periods	Topic
5th	25/07/2024	1	2.4 Design of welded joints for eccentric loads.
	26/07/2024	1	SOLVE NUMERICALS ON CH-2.4
	29/07/2024	1	2.5 State types of riveted joints and types of rivets.
	31/07/2024	1	2.6 Describe failure of riveted joints.
	01/08/2024	1	Failure of Rivet due to Shearing
6th	02/08/2024	1	Failure of Rivet due to Crushing
	05/08/2024	1	SOLVE NUMERICALS ON CH-2.6
	07/08/2024	1	2.7 Determine strength & efficiency of riveted joints
	08/08/2024	1	SOLVE NUMERICALS ON CH-2.7
7th	09/08/2024	1	2.8.1 Steps required to Design riveted joints for pressure vessel.
	12/08/2024	1	2.8.2 Design riveted joints for pressure vessel.
	14/08/2024	1	SOLVE NUMERICALS ON CH-2.8
	16/08/2024	1	CLASS TEST-1
8th	21/08/2024	1	3.1 State function of shafts. 3.2 State materials for shafts
	22/08/2024	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;
	23/08/2024	1	SOLVE NUMERICALS ON CH-3.3 a
9th	28/08/2024	1	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

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LESSON PLAN

10th	29/08/2024	1	SOLVE NUMERICALS ON CH-3.3 b
	30/08/2024	1	3.4 State standard size of shaft as per I.S.
	02/09/2024	1	3.5 State function of keys, types of keys & material of keys.
	04/09/2024	1	3.6 Describe failure of key, effect of key way.
	05/09/2024	1	3.7 Design rectangular sunk key considering its failure against shear & crushing.
	06/09/2024	1	SOLVE NUMERICALS ON CH-3.7
11TH	09/09/2024	1	3.8 Design rectangular sunk key by using empirical relation for given diameter of shaft.
	11/09/2024	1	SOLVE NUMERICALS ON CH-3.7
	12/09/2024	1	3.9 State specification of parallel key, gib-head key, taper key as per I.S.
	13/09/2024	1	INTERNAL ASSESSMENT
12TH	18/09/2024	1	INTERNAL ASSESSMENT
	19/09/2024	1	4.1 Design of Shaft coupling
	20/09/2024	1	4.2 Requirements of a good shaft coupling
13TH	23/09/2024	1	4.3 Types of Coupling.
	25/09/2024	1	4.4.1 Assumptions in Designing of Sleeve or Muff-Coupling.
	26/09/2024	1	4.4.2 Steps for Designing Sleeve or Muff-Coupling.
	27/09/2024	1	SOLVE NUMERICALS ON CH-4.4
14TH	30/09/2024	1	4.5 Definition & Assumptions in Designing of Clamp or Compression Coupling.

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15TH	03/10/2024	1	4.5.2 Steps For Designing Clamp or Compression Coupling.
	04/10/2024	1	SOLVE NUMERICALS ON CH-4.5
	14/10/2024	1	5.1.1 Define Spring & State its function
	17/10/2024	1	5.1.2 Materials used for helical spring.
16TH	18/10/2024	1	5.2 Standard size spring wire. (SWG).
	21/10/2024	1	5.3 Terms used in compression spring.
	23/10/2024	1	5.4 Stress in helical spring of a circular wire.
	24/10/2024	1	5.5 Deflection of helical spring of circular wire
	25/10/2024	1	SOLVE NUMERICALS ON CH-5.5
17TH	29/10/2024	1	5.6 Surge in spring.
	30/10/2024	1	5.7 Solve numerical on design of closed coil helical compression spring.
	01/11/2024	1	CLASS TEST-2
	04/11/2024	1	REVISION
18TH	06/11/2024	1	REVISION
	07/11/2024	1	REVISION
	08/11/2024	1	PREVIOUS YEAR QUESTION DISCUSSION

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