

BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF MECHANICAL ENGINEERING



LESSON PLAN

SUBJECT: DESIGN OF MACHINE ELEMENT (TH-2)

FACULTY: PRIYADARSINI MALLICK

Priyadarsini Mallik, Lect, Mech

ACCADEMIC SESSION: 2022-23

SEMESTER: 5TH

SECTION-A

[Signature]
Sd/- 14.09.22

H O D (Mechanical Engg.)

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



Discipline- Mechanical Engg	Semester :- 5 th		Name of the teaching faculty :- Priyadarsini Mallick
Subject- Design of Machine Elements	No of periods Allotted per Week- 04 (Tuesday Wednesday Thursday Friday)		Semester from Date - 15/09/2022 To Date - 22/12/2022 No. of Weeks: 14
Week	Class	No Of Periods available	Theory Topics
1st	15/09/2022	1	1.1 Introduction to Machine Design and Classify it.
	16/09/2022	1	1.2 Different mechanical engineering materials used in design with their uses and their mechanical and physical properties.
2nd	20/09/2022	1	1.3.1 Define working stress, yield stress, ultimate stress & factor of safety
	21/09/2022	1	1.3.2 stress -strain curve for M.S
	22/09/2022	1	1.3.3 stress -strain curve for C.I.
	23/09/2022	1	1.4 Modes of Failure (By elastic deflection, general yielding & fracture)
3rd	27/09/2022	1	1.5 State the factors governing the design of machine elements.
	28/09/2022	1	1.6 Describe design procedure.
	29/09/2022	1	Design of fastening elements: 2.1 Joints and their classification..
	30/09/2022	1	2.2 State types of welded joints
4th	11/10/2022	1	2.3 State advantages of welded joints over other joints.

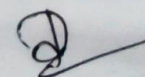
	12/10/2022	1	2.4 Design of welded joints for eccentric loads.
	13/10/2022	1	SOLVE NUMERICALS ON CH-2.4
	14/10/2022	1	2.5 State types of riveted joints and types of rivets.
5th	18/10/2022	1	2.6 Describe failure of riveted joints.
	19/10/2022	1	SOLVE NUMERICALS ON CH-2.6
	20/10/2022	1	2.7 Determine strength & efficiency of riveted joints
	21/10/2022	1	SOLVE NUMERICALS ON CH-2.7
6th	25/10/2022	1	Design riveted joints for pressure vessel.
	26/10/2022	1	SOLVE NUMERICALS ON CH-2.8
	27/10/2022	1	CLASS TEST-1
	28/10/2022	1	Design of shafts and Keys: 3.1 State function of shafts. 3.2 State materials for shafts
7th	01/11/2022	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;
	02/11/2022	1	SOLVE NUMERICALS ON CH-3.3 a
	03/11/2022	1	b) Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity
	04/11/2022	1	SOLVE NUMERICALS ON CH-3.3 b

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



8th	09/11/2022	1	3.4 State standard size of shaft as per I.S.
	10/11/2022	1	3.5 State function of keys, types of keys & material of keys.
	11/11/2022	1	3.6 Describe failure of key, effect of key way.
9th	15/11/2022	1	3.7 Design rectangular sunk key considering its failure against shear & crushing.
	16/11/2022	1	SOLVE NUMERICALS ON CH-3.7
	17/11/2022	1	3.8 Design rectangular sunk key by using empirical relation for given diameter of shaft.
	18/11/2022	1	SOLVE NUMERICALS ON CH-3.7
10th	22/11/2022	1	3.9 State specification of parallel key, gib-head key, taper key as per I.S.
	23/11/2022	1	4.1 Design of Shaft coupling
	24/11/2022	1	4.2 Requirements of a good shaft coupling 4.3 Types of Coupling.
	25/11/2022	1	4.4 Design of Sleeve or Muff-Coupling.
11 TH	29/11/2022	1	SOLVE NUMERICALS ON CH-4.4
	30/11/2022	1	4.5 Design of Clamp or Compression Coupling.
	01/12/2022	1	SOLVE NUMERICALS ON CH-4.5
	02/12/2022	1	5.1 Materials used for helical spring.
12 TH	06/12/2022	1	5.2 Standard size spring wire. (SWG).

	07/12/2022	1	5.3 Terms used in compression spring.
	08/12/2022	1	5.4 Stress in helical spring of a circular wire.
	09/12/2022	1	5.5 Deflection of helical spring of circular wire
13TH	13/12/2022	1	SOLVE NUMERICALS ON CH-5.5
	14/12/2022	1	5.6 Surge in spring.
	15/12/2022	1	5.7 Solve numerical on design of closed coil helical compression spring.
	16/12/2022	1	CLASS TEST-2
14TH	20/12/2022	1	REVISION
	21/12/2022	1	REVISION
	22/12/2022	1	DOUBT CLEARING CLASS



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



Week	Class	No Of Periods available	Theory Topics
15TH	03/01/2023	1	4.5 Design of Clamp or Compression Coupling.
	04/01/2023	1	SOLVE NUMERICALS ON CH-4.5
	05/01/2023	1	5.1 Materials used for helical spring.
	06/01/2023	1	5.2 Standard size spring wire. (SWG).
16TH	10/01/2023	1	5.3 Terms used in compression spring.
	11/01/2023	1	5.4 Stress in helical spring of a circular wire.
	12/01/2023	1	5.5 Deflection of helical spring of circular wire
	13/01/2023	1	SOLVE NUMERICALS ON CH-5.5
17TH	17/01/2023	1	5.6 Surge in spring.
	18/01/2023	1	5.7 Solve numerical on design of closed coil helical compression spring.
	19/01/2023	1	REVISION
	20/01/2023	1	REVISION