

LESSON PLAN

Semester:6th		Year: 3rd	Course: B.Tech
Branch : Mech Engg		Sub: DME	Total Credit:03
		Sub Code :	
Name of the Faculty:		Debraj Mishra	
Designation :		Asst Professor.	
Department :		Mechanical Engg.	
Session		2024-25	
Recommended Books		<u>Text book:</u>	
		1 Design of Machine Elements by V.B.Bhandari. Tata McGraw Hill	
		2 Machine Design by N.Sidheswar, McGraw-Hi	
		<u>Reference Books:</u>	
		1Mechanical Engineering Design, J.E.Shigley, C.R.Mischke, R.G.Budyna	
		2 Machine Design by N.Sidheswar, McGraw-Hi	
Sl. No.	Lecture No.	Topics to be covered	No. of Classes
MODULE-1			
1	Lecture-01	Mechanical engineering design; Introduction to design procedure,	8
2	Lecture-02	Mechanical engineering design-, Stages in design,	
3	Lecture-03	Preferred numbers, Fits and Tolerances	
4	Lecture-04	Engineering materials: Ferrous, Non-ferrous materials:	
5	Lecture-05	Non-metals, design requirements; properties of materials	
6	Lecture-06	Material selection, Use of Data books.	
7	Lecture-07	Fundamentals of Machine Design: Types of load, Modes of failure, factor of safety concepts	
8	Lecture-08	Theories of Failure, concept and mitigation of stress concentration	
9	Lecture-09	Theories of Failure, concept and mitigation of stress concentration	
10	Lecture-10	Goodman, Gerber and Soderberg criteria,problems on above	
MODULE-2			
11	Lecture-11	Design of Joint;Rivets,types of riveted joints & heads	10
12	Lecture-12	Lap,butt,lorenge joints,types of failures,strength equation and efficienciof joints.	
13	Lecture-13	Longitudinal butt joint for boiler,Circumferential Lap joint for boiler shell	
14	Lecture-14	Eccentrically loaded riveted joints.	
15	Lecture-15	Strength of transverse fillet welds	
16	Lecture-16	,Max.shear stresses in parrellel fillet and tranverse fillet weld.	
17	Lecture-17	Axially loaded,Eccentrically loaded welded joints,Welded joint subjected to bending moment	
18	Lecture-18	Design of different types of cutter –joints.	
19	Lecture-19	Design of different types of d knuckle joints	
20	Lecture-20	Problems on above.	
MODULE-3			
21	Lecture-21	Design of Keys, Shaft and Couplings;; Design of keys <u>classification of keys & pins</u>	
22	Lecture-22	Theories of failure,; Design of shafts , based on Strength, Design of shafts based on torsional	
23	Lecture-23	Design of shafts on fluctuating loads,ASMEcode for shaft design,Design of Rigid coupling,	
24	Lecture-24	Design of couplings; , Flexible coupling, problems on above	
25	Lecture-25	Design of Mechanical Springs: Types of helical springs,	
26	Lecture-26	Design of Helical springs,	

27	Lecture-27	Bulking of spring, spring surge	9
28	Lecture-28	End condition of spring	
29	Lecture-29	Design of leaf spring, nipping. Problems on above.	
MODULE-4			
30	Lecture-30	Bearings: Types and selection of ball bearing.	8
31	Lecture-31	Types and selection of Roller bearing. Dynamic load rating of bearing	
32	Lecture-32	Problems on bearing life.	
33	Lecture-33	Static load rating of bearing	
34	Lecture-34	Design of sliding contact bearing	
35	Lecture-35	, Design of Journal Bearing	
36	Lecture-36	Design of Foot step Bearing	
37	Lecture-37	Problems on above.	
38	Lecture-38	Revision class.	
39	Lecture-39	Previous year question practice	
40	Lecture-40	Previous year short questions and problem practice.	

Signature of Faculty Member

Signature of HOD

PRINCIPAL