VIKASH INSTITUTE OF TECHNOLOGY, BARGARH

LESSON PLAN

Semester:4th		**Year: 2nd**	**Course: B.Tech**
Branch : Mech. Engg.		**Sub: DESIGN OF MACHINE ELEMENTS-I** **Sub Code : MEPC2005**	**Total Credit:03**
Name of the Faculty:		**Durga Prasad Nayak**	
Designation :		**Assitant Professor**	
Department :		**Mechanical Engineering**	
Session		**2024-25**	
Recommended Books		**Text book**: **1Mechanical Engineering Design, J.E.Shigley, C.R.Mischke, R.G.Budynas and K.J.Nisbett,** **2Design of Machine Elements, V.B.Bhandari, Tata McGraw Hill** **Reference Books**: **1Machine Design, P.C.Sharmaand D.K.Agrawal, S.K.Kataria&Sons** **2Design Hand Book by S.M.Jalaluddin; Anuradha Agencies Publications**	
Sl. No.	**Lecture No.**	**Topics to be covered**	**No. of Classes**
		MODULE-1	
1	Lecture-01	Mechanical Engineering design:	**6**
2	Lecture-02	Introduction to design procedure, Stages in design,	
3	Lecture-03	Code and Standardization, Interchangeability, Preferred numbers,	
4	Lecture-04	Fits and Tolerances, Factor of safety concept,Engineering materials:	
5	Lecture-05	Ferrous, Non-ferrous, design requirements – Properties of Materials,	
6	Lecture-06	Material selection, Use of Data books.	
		MODULE-2	
8	Lecture-07	Machine Element Design: Design of Joints:	**6**
9	Lecture-08	Rivets, Welds	
10	Lecture-09	threaded fasteners based on different types of loading,	
11	Lecture-10	Boiler joints,	
12	Lecture-11	cotter joints	
13	Lecture-12	knuckle joints	
		MODULE-3	
15	Lecture-13	Design of Keys, Shaft and Couplings:	6
16	Lecture-14	Classification of keys and pins, Design of keys and pins,	
17	Lecture-15	Design of shafts: based on strength,	
18	Lecture-16	torsional rigidity and fluctuating load, ASME code for shaft design,	
19	Lecture-17	Design of couplings: Rigid coupling,	
20	Lecture-18	Flexible coupling.	

MODULE-4			
22	Lecture-19	Design of Mechanical Springs:	6
23	Lecture-20	Types of helical springs,	
24	Lecture-21	Design of Helical springs,	
25	Lecture-22	bulking of spring, spring surge,	
26	Lecture-23	end condition of springs,	
27	Lecture-24	Design of leaf springs: nipping.	
MODULE-5			
28	Lecture-25	Bearings:	6
29	Lecture-26	Types and selection of ball and roller bearings,	
30	Lecture-27	Dynamic and static load ratings,	
31	Lecture-28	Bearing life, Design of sliding contact bearings,	
32	Lecture-29	Journal bearing,	
33	Lecture-30	foot step bearing.	

Signature of Faculty Member **Signature of HOD**

PRINCIPAL