INSTITUTE OF ENGINEERING AND MANAGEMENT GOURAHARI VIHAR, PO: RANIPUT, JEYPORE – 764 005

LESSON PLAN

Name of the Subject:Design of machine elements

Name of the Faculty: Rashmi ranjan mishra

Semester: Fifth Semester Branch: mechanical

Semester From: July to December No. of Weeks: 15 Weeks

Week	Day	Theory/ Practical Topics	Classes
		Introduction:	12
	1	Introduction to Machine Design and Classify it	1
1	2	Different mechanical engineering materials used in design	1
1	3	Different mechanical engineering materials used in design & uses	1
	4	properties of material	1
	5	Define working stress, yield stress, ultimate stress	1
2	6	factor of safety	1
2	7	stress –strain curve for M.S	1
	8	stress –strain curve for C.I	1
	9	Modes of Failure (By elastic deflection, general yielding & fracture)	1
	10	State the factors governing the design of machine elements	1
3	11	Describe design procedure	1
	12	Revision	1
		Design of fastening elements	12
	13	Joints and their classification	1
4	14	State types of welded joints	1
4	15	State advantages of welded joints over other joints	1
	16	Design of welded joints for eccentric loads	1
	17	State types of riveted joints and types of rivets	1
_	18	Describe failure of riveted joints.	1
5	19	Determine strength of riveted joints	1
	20	Design riveted joints for pressure vessel	1
	21	Solve numerical on Welded Joint and Riveted Joints	1
6	22	Determine efficiency of riveted joint	1
0	23	Solve numerical	1
	24	Revision	1
7		Design of shafts and Keys:	12
	25	State function of shafts	1

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based on a) Strength: (i) Shear stress, (ii) Combined bending tension; 1 28 Design solid & hollow shafts to transmit a given power at given rpm based on b)Rigidity; (1) angle of twist(2) Deflection(3) modulus of rigidity 1 1 30 State standard size of shaft as per I.S 1 30 State function of keys, types of keys & material of keys. 1 31 Describe failure of key, effect of key way 1 2 2 2 2 2 2 2 2 2		26	State materials for shafts	1
28		27		1
29 State standard size of shaft as per I.S 1 30 State function of keys, types of keys & material of keys. 1 1 31 Describe failure of key, effect of key way 1 32 Design rectangular sunk key considering its failure against shear & crushing. 1 33 Design rectangular sunk key by using empirical relation for given diameter of shaft. 34 State specification of parallel key, gib-head key, taper key as per I.S. 1 35 Solve numerical on Design of Shaft and keys. 1 36 Revision 1 1 1 1 1 1 1 1 1		28		1
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	59	Solve previous yr questions	1	
		60	Solve previous yr questions	1

LEARNING RESOURCES:

- 01. PANDYA AND SHAH MACHINE DESIGN CHAROTAR PUBLICATION
- 02. R.S.KHURMI &J.K.GUPTA A TEXT BOOK OF MACHINE DESIGN S.CHAND
- 03. P.C.SHARMA &D.K AGRAWAL A TEXT BOOK OF MACHINE DESIGN S.K.KATARIY A
- 04. V.B.BHANDARI DESIGN OF MACHINE ELEMENTS TMH
- 05. S.MD.JALAUDEEN DESIGN DATA BOOK ANURADHA PUBLICATION