

Devi Ahilya Vishwavidyalaya, Indore, India Institute of Engineering & Technology					III Year B.E. (Mechanical Engg.) (Full Time)	
Course Code & Name	Instructions Hours per Semester and Credits					
6 RMPC4-Workshop & Practical MACHINE DESIGN II Duration of Theory Paper- 02 Hours	Classroom Instruction (CI)		Lab Instruction (LI)	Term Work (TW) and Self Learning (SL)	Total no. of Hours Per semester	Total Credits (Total Hours/30)
	L	T	P	TW+SL	40	
	00	00	40			

Learning Objectives:

1. To provide the knowledge of fundamentals of designing the Power Transmitting Elements.
2. To introduce the designing of Internal Engine Components.
3. To develop skill to analyze the component under Dynamic loading.
4. To introduce the importance of Seals & Gasket in Engine.

Pre requisite(s): Machine Design I, Material Science, Strength of Material.

COURSE CONTENT

COURSE CONTENTS

1. Problem on Design of Single Plate Clutch/Cone Clutch
2. Problem on Design of Centrifugal Clutch.
3. Problem on Design of Flat/V Belt.
4. Problem on Design of Screw Jack.
5. Problem on Design of Spur/Helical/Bevel Gears.
6. Problem on Design of parts subjected to Fatigue Loading.
7. Problem on Design of Shoe/Band/Block/Internal Expanding Brake.
8. Problem on Design of Engine Cylinder/Piston/Connecting rod.
9. Problem on Design of Crank Shaft.
10. Problem on Design of Valve and Valve gear mechanism

Course Outcome (CO)	After completion of the course, students will be able to:
CO1	Acquire the practical Knowledge of Selection and Design of Power Transmitting Elements Like Clutches, Power screw, Belts and Gears.
CO2	Understand the practical application of Stress concentration factor and analyse its importance in Designing the components under Fatigue loading.
CO3	Acquire the practical Knowledge of Selection of Different Types and components of Brakes and their applications.
CO4	Acquire the practical Knowledge of Engine Component Design Like Cylinder, Piston & Connecting Rod also apply the knowledge to analyse, Evaluate and Create new design for these components by using IT Tools.
CO5	Know practically the types of Crankshafts and Valve Gear Mechanisms, and Analyse, Evaluate and Create new design by considering different design variables. To add on also learn to select seals and gaskets based on applications

BOOKS RECOMMENDED:

- [1]. Shigley J.E., *Mechanical Engineering Design*, McGraw-Hill 2015.
- [2]. Spotts M.F., Shoup T.E., Hrnberger L.E., *Design of Machine Elements*, Pearson Education ,8e,2007.
- [3]. Sharma P.C. & Aggarwal D.K., *Machine Design*, S.K.Kataria & Sons,11e,2013
- [4]. Bhandari V.B., *Design of Machine Elements*, McGraw-Hill, 4e,2017.
- [5]. Black and Adams, *Machine Design*, Mc.Graw Hill,1968
- [6]. Maleev V.L., *I.C.Engine Design*, , Mc.Graw Hill ,1945

CO-PO-PSO Mapping

Course Name: **Machine Design II**

Course Code: **6RMPC4**

CO	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PSO1	PSO2	PSO3
CO1	3	3	3	3	2	1	0	3	3	0	0	3	2	1
CO2	3	3	3	3	2	1	0	3	3	0	0	3	2	1
CO3	3	3	3	3	2	1	0	3	3	0	0	3	2	1
CO4	3	3	3	3	2	1	0	3	3	0	0	3	2	1
CO5	3	3	3	3	2	1	0	3	3	0	0	3	2	1
Average	3	3	3	3	2	1	0	3	3	0	0	3	2	1

