Pimpri Chinchwad Education Trust's

Pimpri Chinchwad College of Engineering

Department: Mechanical Engg **Academic year -2022-23** **Date :- 21/02/2023**

Course Outline

Class: SY Mechanical **Name of the Course: Kinematics and Theory of Machines**

Relevance of the course:
Kinematics and Theory of Machines is a fundamental course in Engineering Design Domain. It builds understanding of students in transforming and transmitting motion, and key elements of a machine. Curriculum indent to address and apply to wide domain of engineering from Machineries in all the fields, Agriculture, builds base for Robotics and Automation Machinery.

Pre-requisites:
Engineering Mathematics, Fundamental of Mechanics, Power Transmission Elements, Type of Motion

Teaching Scheme				**Evaluation Scheme**			
Lecture	**Tutorial**	**Credit**	**Hours**	**IE**	**MTE**	**ETE**	**Total**
3	--	3	3	20	30	50	100

Internal Assessment Tools and Activities:

1. **IE-1 Mode Consist: of based on first two units –**
   a. **Survey for Identification of Mechanism (PO 3,12)**
   b. **Velocity Analysis of the Surveyed Mechanism**
2. **IE-2 Model/Toy Making with cams and Gears Mechanism: will be through assignments based on unit 4 to 5 (Group of TWO Students) (PO 3, 9,10,11,12)**
3. **Case Study based Assignment on Unit 6:**

Course Outcomes:

CO	Statement	No. of Lectures Planned	Content Delivery method	Assessment Tools Planned
CO1	**Identify** and analyse mechanisms in real life applications.	5	PPT, Case study, Animation, C & B Demonstration Models	IE 1 MTE ETE
CO2	**Analyse** velocity & acceleration of mechanism by Graphical and analytical	7	PPT, C & B	IE 1 MTE ETE

	method			
CO3	**Synthesize** linkage for given application	5	PPT, Case study, C & B	MTE ETE
CO3	**Synthesize** Cam for given application	7	PPT, Case study, C & B, Demonstration	IE 2 ETE
CO4	**Apply** Fundamentals of Gear Theory and **Analyse** Epi-cyclic Gear Train for speed and Torque.	6	PPT, Animation, C & B Demonstration Models	IE 2 ETE
CO5	**Compute** Frictional torque and Power in Collar and Pivot bearing, Clutch and Brake for given application	6	PPT, Case study, C & B Demonstration Models	Assignment ETE

Guest Lecture:
Dr Girish S Modak / Mr Pankaj Dolikar A On Mechanisms in Robotics /Surveillance

		
Mr Atul Kashid Course Faculty Div A	Mr Amit Panchwadkar Course Faculty Div B	Mr Masnaji Nakulwar Course Faculty Div C
Course Coordinator Mr Amit Panchwadkar	Module Coordinator Mr L V Awadhani	