PimpriChinchwad Education Trust's
PimpriChinchwad College of Engineering
Sector No. 26, Pradhikaran,
Nigdi, Pune – 411 044

ISO 9001 Certified

COURSE OUTLINE

Department: Mechanical Engineering A.Y.:2022-23 Sem. - II Date: 01/03/2023
Class: SY Mechanical

Name of the Course: Metrology and Mechanical Measurement

Relevance of the course:
The course Metrology and Mechanical Measurement is the basic course in the Production domain. It provides an opportunity to the learner to take the decisions about accepting or rejecting the inspected parts based on selection of required metrological measuring instrument and design few components in the field of metrology like gauges using the data from the real life applications. It requires the prerequisite knowledge from courses given below

I. Elements of Mechanical Engineering
II. Manufacturing Science
III. Mathematics

Course Outcomes

CO No	CO Statement	No. of Lectures Planned	Content Delivery method	Assessment tools Planned
1.	**CO1: Design** limit gauges to meet desired needs within realistic constraints.	6+1	Presentation, Lecture with Interaction, Demonstration through instruments	IE1, MTE
2.	**CO 2: Use** appropriate method of measurement/instruments/tools/techniques and experimental data to determine geometry and dimensions of parts in engineering applications.	6+2	Presentation, Lecture with Interaction, Demonstration through instruments	IE1, MTE
3.	**CO 3: Select** appropriate advanced measurement/inspection techniques for different applications.	6+1	Presentation, Lecture with Interaction, Industrial Visit	MTE
4.	**CO4: Discuss** fundamentals of instrumentation for measurement applications and interpret static and dynamic characteristics of instruments.	6+1	Presentation, Lecture with Interaction, Demonstration through instruments	IE2, ETE
5.	**CO5: Identify** different sensors for position and temperature measurement.	6+2	Presentation, Lecture with Interaction	IE2, ETE
6.	**CO6: Select** different sensors for force, flow and speed measurement.	6+2	Presentation, Lecture with Interaction	ETE

Assignment:

Assignment Planned	CO Mapped	Tentative schedule
Assignment on Unit I and II	CO 1, CO 2	April 1st Week
Industrial Visit (Virtual/Physical)	CO3, CO4, CO5	May 1st Week

Industrial Visit:

- It is decided to conduct industrial visit at industry having application in the field of both metrology and mechatronics.
- Visit will be conducted in the 1st week of May 2022 either at Baker Gauges or Accurate Gauges.

		
Course Faculty TY B Mr. Nikhil J. Surwade	Course Faculty TY C Mrs. Sanjivan. K. Bhoite	Course Faculty TY A Mr. Varsharani. Y. Gaikhe
Course Co-ordinator	Course Teacher	Course Teacher