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

ISO 9001 Certified

COURSE OUTLINE

Department: Mechanical Engineering A.Y.:2021-22 Sem-I Date:
Class: TE B & C Name of the Course: Mechatronics

Relevance of the course:
Mechatronics, also called as mechatronics engineering, is an interdisciplinary branch of engineering that focuses on the integration of mechanical, electronic and electrical engineering systems, and also includes a combinationof robotics, electronics, computerscience, telecommunications, systems, control,and product engineering.

Course Outcomes

CO No	CO Statement	No. of Lectures Planned	No. of Practical planned	Content Delivery method	Assessment tools Planned
1.	DEFINE key elements of mechatronics, principle of sensor and its characteristics	7	1	Online, video, ppt. presentation	In Sem exam, Unit Test-1, Assignment-1, End Sem exam
2.	UTILIZE concept of signal processing and MAKE use of interfacing systems such as ADC, DAC, Digital I/O	8	2	Online, video, ppt. presentation	In Sem exam, Unit Test-1, End Sem exam
3.	To determine the transfer function and predict the stability of the control system	7	1	Online, video, ppt. presentation	In Sem exam, Unit Test-1, Assignment 2, End Sem exam
4.	To do the modeling of the mechanical system and analyse in time domain and frequency domain	8	1	Online, video, ppt. presentation	Unit Test-2, End Sem exam
5.	Design and analyse the PID control system for real life applications	7	1	Online, video, ppt. presentation	Unit Test-2, End Sem exam
6.	Design and develop PLC ladder programming for real life applications	8	2	Online, video, ppt. presentation	Unit Test-2, End Sem exam

Assignment:

Assignment Planned	CO Mapped	Tentative schedule
Application of Sensors and Actuators in Health Science and Selection of Suitable Sensor and Actuator.	CO1	2nd Week of July
Block Diagram Representation of Feedback Control System and determination of Closed Loop Transfer Function.	CO3	4th Week of August

Mini Project topics offered:

a. Interfacing arduino with Temperature sensor
b. Interfacing of arduino with ultrasonic sensor
c. Fan controlling using arduino due to temperature changes

Industry visit/ Case studies planned:

Virtual industry tour/ Case study based on PLC programming

Guest Lecture/ Co Teaching:

Photograph	Photograph 	Photograph 
Course Faculty TE A Mr. V.K. Aher	Course Faculty TE B Mr. R.A. Gujar	Course Faculty TE C Mr. R.A. Gujar
Course Coordinator: R.A. Gujar Module Coordinator: Mr. S.B. Matekar		