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

COURSE OUTLINE

Department: Mechanical Engineering A.Y.:2023-24 Sem-I Date: 25/07/2021
Class: Final Year BTech Course: Robotics and Automation (BME7506C/BME8506C)

Relevance of the course:

The course is introduced for the final year BTech students as a 'Program Elective VI' in the autonomous curriculum. The contents are designed to the requirements at the industry and postgraduate level. The Robotics and Automation course covers topics like robotics fundamentals, kinematics and dynamics, control systems, sensor integration, mechatronics, industrial automation, and robotic programming. Graduates from this specialisation have good employment opportunities. They can work as robotics engineers, automation engineers, control systems engineers, robotics software developers, research assistants in robotics labs, and automation consultants in industries such as manufacturing, healthcare, agriculture, logistics, and defence. After finishing their B.Tech, students can pursue further education, such as a Master's degree in robotics, automation, or similar subjects. Robotics and automation is a dynamic field with emerging research and application areas.

Course Outcomes

CO No	CO Statement	No. of Theory sessions	Bloom's Level	Assessment tools
1.	**Classify** robots and **Solve** homogeneous transformations.	7	Analyse	IE 1 (5m), MTE (15m), ETE (5m)
2.	**Analyze** the Forward and Inverse kinematics of a robot.	8	Analyse	IE 1 (5m), MTE (15m), ETE (5m)
3.	**Analyze** the Velocity and Static force of a robot.	8	Analyse	MTE (20m), ETE (5m)
4.	**Generate** trajectory for a given path.	8	Evaluate	IE 2 (5m), ETE (20m)
5.	**Analyze and Design** a gripper.	7	Evaluate	IE 2 (5m), ETE (20m)
6.	**Understand** the fundamentals of Automation.	7	Understand	ETE (25m)

Dr. Sanjay B. Matekar
Course Faculty and Coordinator