DRONACHARYA
College of Engineering
Khentawas, Farrukh Nagar, Gurugram, Haryana
Approved by: All India Council for Technical Education (AICTE), New Delhi
Affiliated to: Gurugram University, Gurugram

DEPARTMENT OFROBOTICS AND AUTOMATION ENGINEERING

ACADEMIC YEAR 2023-24

SEMESTER VIth

AIR AND NOISE POLLUTION AND CONTROL (OEC –ME-301G)

CourseOutcome(CO)	DetailsofCourseOutcomes
(CO1)	an understanding of the nature and characteristics of air pollutants, noise pollution and basic concepts of air quality management
(CO2)	ability to identify, formulate and solve air and noise pollution problems
(CO3)	ability to design stacks and particulate air pollution control devices to meet applicable laws.

INSTALLATION TESTING & MAINTENANCE OF ELECTRICAL EQUIPMENTS (OEC –ME-303G)

CourseOutcome(CO)	DetailsofCourseOutcomes
(CO1)	Unload the electrical equipment /machines based on scientific procedure
(CO2)	Commission various electrical equipment/machines
(CO3)	Prepare maintenance schedule of different equipment and machines
(CO4)	Prepare trouble shooting chart for various electrical equipment, machines and domestic appliances v. Carry out different types of earthing
(CO5)	Apply electrical safety regulations and rules during maintenance.

MICROPROCESSOR AND INTERFACING (OEC –ME-305G)

CourseOutcome(CO)	DetailsofCourseOutcomes
(CO1)	Explain the architecture, pin configuration of various microprocessors and Interfacing ICs
(CO2)	Identify various addressing modes
(CO3)	Perform various microprocessor based programs
(CO4)	Apply the concepts of 8086 programming like interfacing, interrupts, stacks & subroutines
(CO5)	Interpret & Solve various automation based problems using microprocessor

COMPUTER AIDED DESIGN & MANUFACTURING LAB (LC-ME -311G)

CourseOutcome(CO)	DetailsofCourseOutcomes
(CO1)	Display of the basic fundamentals of modeling package.
(CO2)	Explore the surface and solid modeling features.
(CO3)	Learning the techniques of 3D modeling of various mechanical parts.
(CO4)	To expedite the procedure and benefits of FEA and CAE.

Manufacturing Technology-II (PCC-ME -302G)

CourseOutcome(CO)	DetailsofCourseOutcomes
(CO1)	Acquire knowledge about mechanics of chip formation and to identify the factors related to tool wear and machinability.
(CO2)	Learn about different gear manufacturing and gear finishing operations.
(CO3)	Select the proper cutting tool material and components of jigs and fixtures
(CO4)	Understand the basics principles of non-conventional machining processes and their applications.
(CO5)	Identify and select different measuring instruments for the inspection of different components.

Robotics Engineering and Applications (PCC-RA -304G)

CourseOutcome(CO)	DetailsofCourseOutcomes
(CO1)	Familiar with robot terminology, robot types and robotic applications
(CO2)	Formulate transformation matrices and kinematic equations for robots and solving them.
(CO3)	Synthesize robot programs for a variety of applications.
(CO4)	Design the procedures needed to accomplish robotics tasks
(CO5)	Synthesize robotic components such as actuators, visions systems, and sensors, into a robotics system.

Artificial Intelligence in Robotics (PCC-RA -308G)

CourseOutcome(CO)	DetailsofCourseOutcomes
(CO1)	Identify problems that are amenable to solution by AI methods.
(CO2)	Identify appropriate AI methods to solve a given problem
(CO3)	Formalise a given problem in the language/framework of different AI methods.
(CO4)	Implement basic AI algorithms
(CO5)	Design and carry out an empirical evaluation of different algorithms on a problem formalisation, and state the conclusions that the evaluation supports

WORKSHOP LAB –I (LC-ME -310G)

CourseOutcome(CO)	DetailsofCourseOutcomes
(CO1)	vapour power cycles and find and compare different cycles based on their performance parameters and efficiencies.
(CO2)	steam boilers, their types and components.
(CO3)	fundamentals of flow of steam through a nozzle.
(CO4)	steam turbines and can calculate their work done and efficiencies.
(CO5)	types and working of condensers and compressors and define their different types of efficiencies

Robotics Engineering and Application Lab (LC-RA -312G)

CourseOutcome(CO)	DetailsofCourseOutcomes
(CO1)	Use of any robotic simulation software to model the different types of robots and calculate work volume for different robots

INTERNAL COMBUSTION ENGINES & GAS TURBINES (PEC-ME -320G)

CourseOutcome(CO)	DetailsofCourseOutcomes
(CO1)	Understand the Air Standard Cycles with their applications.
(CO2)	Analyze carburetion, injection and ignition systems with new technologies.
(CO3)	Conceptualize Combustion System of IC Engines.
(CO4)	Knowledge of Lubrication and Cooling systems and fuel cells.
(CO5)	Analyses the gas turbines.

WELDING TECHNOLOGY (PEC-ME -322G)

CourseOutcome(CO)	DetailsofCourseOutcomes
(CO1)	Lay down Principles and applications of oxyacetylene and electric arc welding.
(CO2)	Understand various types of weld testing.
(CO3)	Have Knowledge of techniques of welding automation.
(CO4)	Describe methods of advanced and special welding processes. Course Contents

AIRCRAFT TECHNOLOGY (PEC-ME -324G)

CourseOutcome(CO)	DetailsofCourseOutcomes
(CO1)	Explore principles of flight and the basic thermodynamics involved.
(CO2)	Have knowledge of Propulsion fundamentals and application of gas turbine system in aircraft.
(CO3)	Understand aerodynamics, different aircraft systems, inspection and maintenance.
(CO4)	Explore different aviation systems along with fighter crafts.

RELIABILITY, AVAILABILITY & MAINTAINABILITY (PEC-ME -326G)

CourseOutcome(CO)	DetailsofCourseOutcomes
(CO1)	Evaluate the reliability of a system and its subcomponents
(CO2)	Gain the necessary knowledge about failure distributions and apply failure maintenance techniques.
(CO3)	Perform reliability analysis of a system and designing the same CO 4 Estimate systems availability and maintainability
(CO4)	Develop the Markov model for the mechanical systems.