

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

# DEPARTMENT OF ROBOTICS AND AUTOMATION ENGINEERING ACADEMIC YEAR 2023-24 SEMESTER VII

### **Hydraulic And Pneumatics (PCC-RA-401G)**

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Demonstrate knowledge of fundamental concepts of Pneumatic and
(000)	Hydraulic control.
(CO2)	Identify various components of Pneumatic and Hydraulic control
	systems.
(CO3)	Design and analyze problems relating to Pneumatic and Hydraulic control systems and components.

#### **Entrepreneurship Development (PCC-ME-403G)**

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Students will be able understand who the entrepreneurs are and what competences needed
(CO2)	Students will be able to understand insights into the management, opportunity search, identification of a product, market flexibility studies, project finalization etc. required for small business enterprise.
(CO3)	Students will be able to write are port and do oral presentation on the topics such as product identification, business ideas, export marketing etc.
(CO4)	Students will be able to know the different financial and other assistance available for establishing small industrial units.

## MICROCONTROLLER AND PLC (PCC-RA-403G)

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Students will be able to introduce the basic features, programming methods and applications of Micro controllers
(CO2)	Students will be able to study about programming in microcontroller
(CO3)	Students will be able to discuss different applications in microcontroller
(CO4)	Students will be able to know about the design of systems using PLC is introduced in detail.
(CO5)	Students will be able to know about the applications in PLC

## **Digital Image Processing (PCC-RA-405G)**

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Know and understand the basics and fundamentals of digital image processing, such as digitization, sampling, quantization, and 2D-transforms.
(CO2)	Operate on images using the techniques of smoothing, sharpening and enhancement.
(CO3)	Understand the restoration concepts and filtering techniques.
(CO4)	Learn the basics of segmentation, features extraction, compression and recognition methods for color models.

## Hydraulic and Pneumatic Lab (LC-RA-401G)

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Describe hydraulic and pneumatic systems and overview of control systems & actuators
(CO2)	Differentiate between various sensors, transducers and actuators and their applications.
(CO3)	Relate various signal conditioning units, amplifiers, logic gates and their role in programmable logic controllers.

# Constitution of India (MC-317G)

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Discuss the growth of the demand for civil rights in India for the bulk of Indians before the arrival of Gandhi in Indian politics.
(CO2)	Discuss the intellectual origins of the framework of argument that informed the conceptualization of social reforms leading to revolution in India.
(CO3)	Discuss the circumstances surrounding the foundation of the Congress Socialist Party [CSP] under the leadership of Jawaharlal Nehru and the eventual failure of the proposal of direct elections through adult suffrage in the Indian Constitution.
(CO4)	Discuss the passage of the Hindu Code Bill of 1956
(CO5)	The examination of the regular students will be conducted by the concerned college/Institute internally.