



INDUSTRIAL AUTOMATION, ROBOTICS AND AI

- B.E/B. Tech, M.E/M.Tech, Diploma – Electrical, Electronics, Instrumentation, Industrial Electronics, Mechatronics, CSE, IT, Mechanical or equivalent.
- Final year B.E/ B. Tech students can also apply (Diploma will be issued after completion of B.Tech)

DURATION: 6 months (26 weeks)

START DATE: 13-01-2020

END DATE: 10-07-2020

TIMINGS: 9:30 AM- 13:30 PM

COURSE CONTENTS

S.No	Topic	Duration
1	Introduction to Industrial Control System & Industrial Automation History, Applications & Examples	1 week
2	Programmable Logic Controllers (PLC) Block Diagram of PLC & Role of each module, Types of I/O Modules and types of PLC, I/O Configuration Types, PLC wiring : Source and Sink Concept, PLC programming S/W, Protocols, Creating application, Software Configuration, Data Files and I/O Addressing, Introduction bit Instructions (NC, NO, OP), Uploading and Downloading and Monitoring logic in PLC, Instruction set, Timers, Counters, Hands-on Training and making minor project.	3 weeks
3	Human Machine Interface (HMI) Introduction of HMI Hardware, Communication Steps Procedure b/w HMI and PLC, Configuration of HMI Panel, Tags, Tag types, Tag creation, Hands on Training on HMI Panel.	2 weeks
4	Supervisory Control & Data Acquisition (SCADA) Introduction of SCADA, Creating new application in SCADA s/w, Graphic Display Setting, pop up window, filling properties, data logging and trending, alarms, events, security, etc., Hands-on Training.	2 weeks
5	Variable Frequency Drive (VFD) Introduction and Type of Drives: AC Drives, DC Drives, Control Strategies of AC Drives: Variable Frequency Drives (V/Hz Drive), Sensor less Vector Drives, Flux Vector Drives, Field Oriented Control Drives, Braking, Hands-on Training.	2 weeks
6	Motion Control System Concepts of Factory Automation in Industries, motion control components, Motion Profiles, Gear ratio/box, Motion Software programming, linear/circular interpolation, Hands-on Training on Servo & Motion Control System.	3 weeks
7	Basics of Artificial Intelligence Introduction to Python programming. Regression - Linear, Model representation, Cost Function, Gradient Descent for Linear regression, Vectorized Implementation, Gradient Descent for Multiple Variables, Feature Scaling, Learning Rate. Introduction to ML, Supervised Learning, Unsupervised Learning, Classifications, and clustering with practicals, Deep learning with practicals.	4 weeks
8	Vision System Concepts of Vision Basics & configuration, Configuration & hardware setup of vision system, Configuration & software setup of vision system, Hands-on Training.	2 weeks
9	Industrial Robotics Introduction to Robotics System, Concepts of Mechanisations and components used in Robotics, Robot Applications i.e. Pick & Place, Palletizing & Screw Width Servo, Hands-on Training.	3 weeks
10	Project Work	4 weeks

HOW TO APPLY: For Admission, submit training letter from college/university, copy of ID card and admission form (download from www.cdac.in) along with fee of Rs.10000/- + Tax (1st Installment) at CDAC, A-34, Phase 8, Industrial Area, Mohali – 160071. Fee can be paid in cash/debit card or through Demand Draft in favor of “Director CDAC”, payable at Mohali.

NOTE: Seats are limited and admission is on first come first serve basis, 75% attendance is must for award of certificate.

For registration click here: <https://forms.gle/yD1MgfRnWXipHytj9>