



LIGHT AUTOMATION
ACADEMY

LIGHT AUTOMATION ACADEMY.

PLC, HMI, SCADA INDUSTRIAL
AND SMART HOME
AUTOMATION TRAINING.



**LIGHT AUTOMATION
ACADEMY**

LIGHT AUTOMATION ACADEMY TECHNICAL TRAINING PROGRAMME

There are people without jobs, and jobs without people. The skills gap is real, and it's only getting wider, what is the Skills Gap?

It's a shortage of skilled, trained people. It's the difference between what workers know how to do and what employers need.

This Program is intended for young people who want to develop their knowledge and skills using the latest technology. We are equipped, and experienced and have prepared ourselves to help you in your career Journey. You will be given an opportunity to join us in the field for projects. This program combines the two most sort after Skills in the world

Industrial Automation

- PLC programming
- Visualization (HMI AND SCADA)
- Motion (Drives, Motor, Servo)
- Sensor Technology

Smart Home Automation

- Loxone Smart Home
- KNX
- Google Home
- Amazon Alexa
- Raspberry pi
- Multimedia
- Access Control
- Gate Automation
- Networking
- Smart Cameras
- Smart Sensors

Application Requirements

*We're looking for bright and determined school leavers from all educational backgrounds from **age 14 and above**. The ideal person is:*

- Just finishing/finished Secondary School
- Open-minded and curious about the world
- Looking to gain a skill needed in the industries
- Looking to become an installer
- Keen to contribute to a challenging and diverse environment



Program Duration
6 Months and 12 Month

What's Next After Training?

- We recommend Students to Industries for Employment opportunities
- We register students on our installer database for Discounted offers on all products needed for Projects
- Continuous Mentorship and support when needed

We're looking for talented young people who want to take on the challenges of tomorrow. **THINK THIS IS YOU?** Join us now don't wait any longer!

Nobody has ever come to Light Automation and remain the same!

GRAB YOUR FORM NOW

Corporate Head Office:

No 3, Oluyole Way New Bodija,
Opp Favos Building,
Behind Mr. Biggs.

Call: 0813 006 3696 **WhatsApp:** 09070942512

or send an email to: info@lightautomationacademy.com

WHO SHOULD ATTEND?

PLC, HMI and SCADA Industrial & Smart Home Automation Training Course would be suitable for:

01

Brilliant Minds ready to make an impact in their lifetime

02

Undergraduates searching for an internship location that establishes them to become relevant while in school and after school.

03

Graduates in engineering field ready to utilize the practical applications of engineering

04

Maintenance personnel

05

Programmers

06

Configuring engineers

07

Service personnel

08

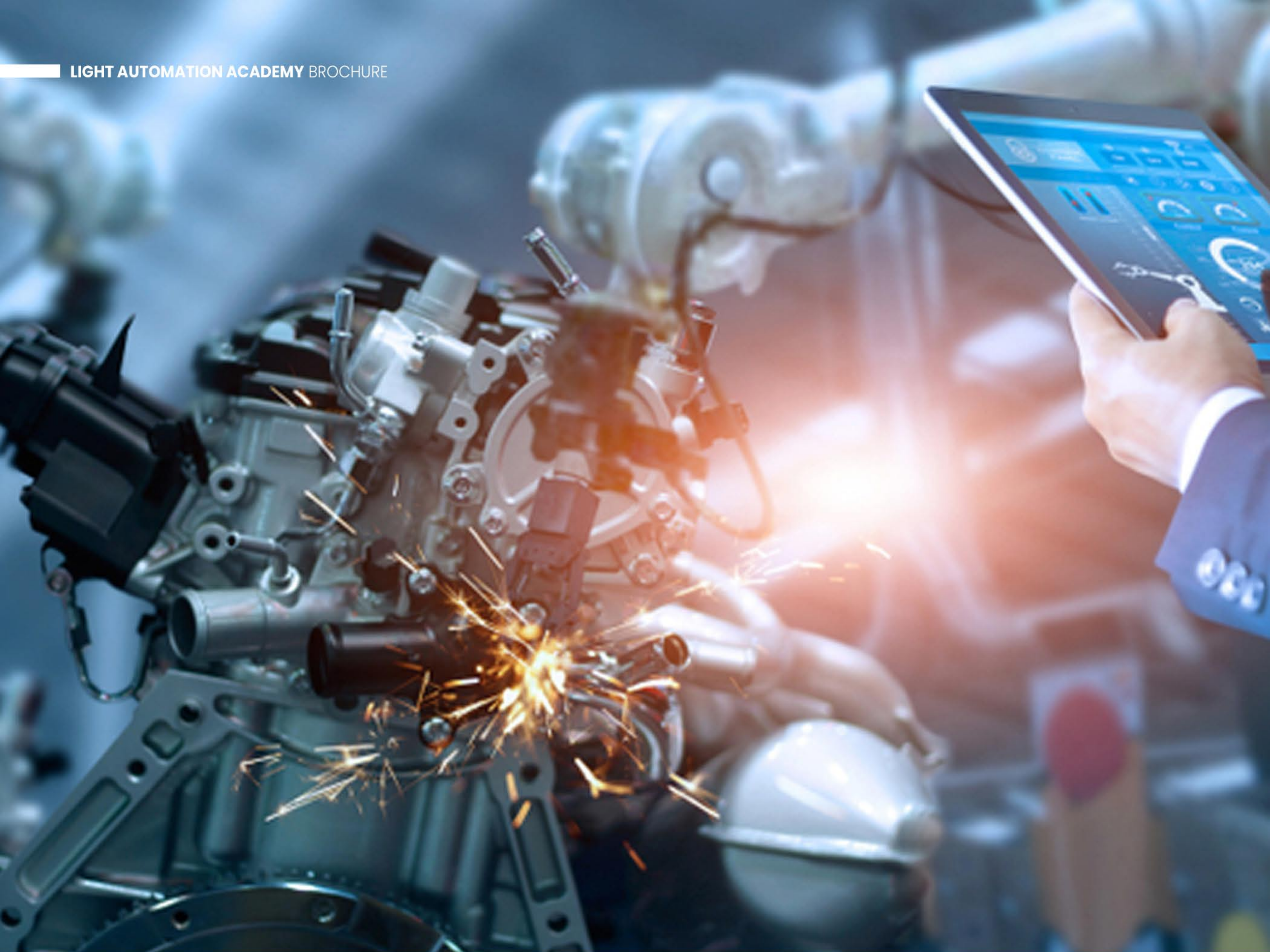
Commissioning engineers

09

Operator

PREREQUISITES

The skills and ability to work on a MS Windows PC, keyboard and mouse to include opening and closing programs, finding files, copy and paste objects /data (text, etc.). Drag and drop files, objects/data (text, etc.). Knowledge of using menus and multi-menus, manipulation of windows in a multi-window environment. Use of MS Windows Help.



BONUSES PLACEMENT

We aren't equipping you with the right skills and leaving you alone at the end of the training!

Light Automation Academy has a database of field professionals and various automation companies.

Similarly, LAA registered company's HR department informs us about vacancies and we send them the right candidates according to the job profiles.

We keep tabs with the industry and whenever there is a requirement for a professional, we inform you based on their preferences.

All LAA registered members will be notified of job openings (preferred field & location) and details of interested candidates will be forwarded to the HR department of the company.

MODULES

01

INDUSTRIAL AUTOMATION

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02

LAA AUTOMATION

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ELECTRICAL TRAINING

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04

HOME AUTOMATION

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MECHANICAL TRAINING/DESIGN

Course goals
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MODULE 1

INDUSTRIAL AUTOMATION COURSE

MODULE ONE

INDUSTRIAL AUTOMATION COURSE

ELECTRO-PNEUMATICS

Course Overview

At the end of the course, you will

- + Be able to interpret electro-pneumatic drawings
- + Fundamentals of compressed air generation and distribution
- + Understand the structure and function of pneumatic system
- + Write basic PLC pneumatic programs for industrial standards and safety applications
- + Troubleshoot and fix an electro-pneumatic system
- + Build an HMI/SCADA monitoring system for a pneumatic set-up

Course Content

- + Basics of electro-pneumatics
- + Basic principles of compressed air supply, production and distribution
- + Structure and function of pneumatic devices
- + Basics principles pneumatic valves, cylinder and solenoid coils
- + Reading pneumatic diagrams
- + Fundamentals of control and modulating waves
- + Design of electro-pneumatic systems
- + Writing a basic pneumatic PLC(Siemens or Allen Bradley) program for industrial standards and safety applications
- + Pneumatic system faults identification and elimination

PLC PROGRAMMING I (ALLEN BRANDLEY)

Course Overview

At the end of the course, you will

- + Set up and wire Allen Bradley PLC control systems from scratch
- + Set-up, wire and program Allen Bradley PLC control systems from scratch
- + Establish communication with PLCs using RS links software
- + Troubleshoot basic programs trace faulty SLC 500 PLC/modules and replace them
- + Troubleshoot and fix an electro-pneumatic system
- + Perform basic PLC Programming (discrete signals) and download to PLCs
- + Modify existing programs for different applications
- + View the status of SLC-500 input and output data tables
- + Configure the I/O for a PLC project

Course Content

- + Introduction to PLCs
- + PLC set-up and wiring
- + Establishing communication with PLCs
- + PLC programming with ladder logic
- + Establishing communications with Allen Bradley PLCs using RS links
- + Introduction to PLC programming using ladder logic
- + I/O configuration (Hardware configuration)
- + Downloading and uploading to PLCs
- + Data types and files
- + Programming applications and navigation through Allen-Bradley Logix 500 software
- + Introduction to IEC 1131 standards
- + Electrical continuity versus logical continuity
- + Applications of discrete inputs with PLC's
- + PLC timer and counter concepts, programming and applications

PLC PROGRAMMING I (ALLEN BRANDLEY)

Course Content

- + Programming applications using sequencers
- + Hands on practical exercises and simulations
- + Wiring, set-up, programming and operation of field devices such as sensors and VFDs PLC troubleshooting

PLC PROGRAMMING I (Siemens S7 300, 400 PLCs)

Course Overview

At the end of the course, you will

- + Set-up, wire and program Siemens PLC control systems from scratch
- + Troubleshoot basic programs, trace faulty Siemens s7 PLC/modules and replace them
- + Perform basic PLC programming (discrete signals) and download to PLCs
- + Modify existing programs for different applications.

Course Content

- + Introduction to PLCs
- + PLC set-up and wiring
- + Establishing communication with PLCs
- + PLC programming with ladder logic
- + STEP 7 installation techniques & components
- + Hardware configuration & addressing of Signal Modules
- + CPU Properties
- + Symbolic notation & symbols table handling
- + Organization Blocks (OBs), Data blocks(DBs) Function Blocks (FBs)
- + Data types
- + Introduction to IEC 1131 standards
- + Commissioning & Monitoring / Modifying Variables
- + Linear / Structured Programming Techniques
- + Debugging (troubleshooting) a program
- + Binary operations & gates
- + Downloading and uploading a program
- + Configuration & addressing of modules
- + Creating projects in LAD/STL/FBD
- + Basic functions (timers, counters, comparators, jumps etc.)
- + Data handling including arrays & structures
- + Diagnostics with B, I, L stacks
- + Wiring, set-up, programming and operation of field devices such as sensors and VFDs
- + Basic PLC troubleshooting and maintenance

PLC PROGRAMMING II (Allen Bradeley PLC)

Course Overview

At the end of the course, you will

- + Design and execute automation projects
- + Program, troubleshoot and maintain continuous signal field devices such as level meters, VFDs, temperature sensors, pressure sensors, modulating valves etc
- + Establish communication between two or more PLCs
- + Design process control systems with PID controls

Course Content

- + Set up, wiring and operation of continuous signal devices such as VFDs, flow meters, temperature sensors to PLCs
- + Continuous signal (analog) programming
- + Introduction to SLC 500 advance functions such as JSR, SCP and MCR and their applications
- + Connecting and communicating between two or more PLCs
- + PLC extensions
- + Process control using PID loop programming (with practical sessions)
- + Introduction to process controls
- + Open and close loop controls
- + Introduction to PID concept and applications
- + PID programming
- + PID tuning
- + Introduction to HMIs (RS view)

PLC PROGRAMMING II (Siemens S7 300, 400 PLCs)

Course Overview

At the end of the course, you will

- + Design and execute automation projects
- + Program, troubleshoot and maintain continuous signal field devices such as level meters, VFDs, temperature sensors, pressure sensors, modulating valves etc
- + Establish communication between two or more PLCs
- + Design process control systems with PID controls

Course Content

- + Set up, wiring and operation of continuous signal devices such as VFDs, flow meters, temperature sensors to PLCs
- + Continuous signal (analog) programming
- + Introduction to S7 function blocks (FBs), function Calls(FCs), special function Blocks (SFBs) and Special function Calls (SFCs) and their applications
- + Connecting and communicating between two or more PLCs
- + Profibus connections and programming
- + Process control using PID loop programming (with practical sessions)
- + Introduction to process controls
- + Open and close loop controls
- + Introduction to PID concept and applications
- + PID programming
- + PID tuning
- + Introduction to HMIs (winCC)

HMI/SCADA

(Allen Bradley PLCs)

Course Overview

At the end of the course, you will

- + Design user friendly Human Machine Interfaces (HMI) using Rs view 32/Factory Talk view software
- + Connect a Rs view/Factory Talk design (file) into a Rs Logix 500 project
- + Understand basic concept of tags etc and communications with the PLC
- + Backup and restore a Rs view program when required
- + Perform basic system diagnostics on Rs view 32/Factory Talk when a problem occurs
- + Add basic functions to screens, Pushbuttons, Numeric Display, Bar graphs, Trends etc

Course Content

- + Connecting a Rs view32/Factory project to a Rs Logix 500/5000 project
- + Navigating the Rs view 32/Factory Talk Software
- + Defining communication parameters
- + Using the Tool bar
- + Object properties
- + Object Animations
- + Creating a Tag Database
- + Bar graphs and sliders
- + Trends
- + Alarms
- + Creating a Report for a Rs view/Factory Talk Application
- + Troubleshooting a Rs view Terminal and Application

HMI/SCADA SIMATIC WINCC

Course Overview

At the end of the course, you will

- + Design user friendly Human Machine Interfaces (HMI) using Rs view 32/Factory Talk view software
- + Connect a Rs view/Factory Talk design (file) into a Rs Logix 500 project
- + Understand basic concept of tags etc and communications with the PLC
- + Backup and restore a Rs view program when required
- + Perform basic system diagnostics on Rs view 32/Factory Talk when a problem occurs
- + Add basic functions to screens, Pushbuttons, Numeric Display, Bar graphs, Trends etc

Course Content

- + Connecting a Rs view32/Factory project to a Rs Logix 500/5000 project
- + Navigating the Rs view 32/Factory Talk Software
- + Defining communication parameters
- + Using the Tool bar
- + Object properties
- + Object Animations
- + Creating a Tag Database
- + Bar graphs and sliders
- + Trends
- + Alarms
- + Creating a Report for a Rs view/Factory Talk Application
- + Troubleshooting a Rs view Terminal and Application

HMI/SCADA USING WONDERWARE

Course Overview

At the end of the course, you will

- + Creation of an HMI/SCADA project using Wonderware Intouch software
- + Integrate a WinCC design (file) into a Step 7 project
- + Integration of an HMI/SCADA project to Siemens and Allen Bradley PLCs
- + Introduction to OPC (Open Platform Communications) servers

Course Content

- + Getting Started on Wonderware Intouch (Creating a new project)
- + Integrating Wonderware projects to different PLCs
- + Creating Access names and Topics
- + Using the System Management Console(SMC)
- + Understanding Drivers.DASSiDirect etc
- + Creating a Tag Database
- + Creating a tag Database
- + Adding Windows (Screens)
- + Create Pushbuttons
- + Security and User Administration
- + Input and Output Value Displays
- + Animating Objects
- + Bar graphs and sliders
- + Alarms
- + Real-time Trends
- + Historical Trends
- + Launching Wonderware Intouch Runtime

MODULE 2

LAA AUTOMATION COURSE

MODULE TWO

LAA AUTOMATION COURSE

CERTIFICATE IN CONTROL SYSTEM / AUTOMATION ENGINEERING IU (Allen Bradley)

Course Overview

At the end of the course, you will

- + Set-up, wire and program Siemens PLC control systems from scratch
- + Troubleshoot basic programs, trace faulty Allen Bradley PLCs /modules and replace them
- + Perform basic and advanced PLC programming
- + Setup- program and operate field devices such as level meters, flow meters, VFDs, modulating valves etc
- + Design process control systems with PID loop programming
- + Modify existing programs for different applications
- + Design user friendly Human Machine interfaces

Course Content

- + Introduction to PLCs
- + PLC set-up and wiring
- + Establishing communication with PLCs
- + PLC programming with ladder logic
- + RS Logix 500,5000 installation techniques & components
- + Creating projects
- + Hardware configuration (basic and Advanced)
- + CPU Properties
- + Symbolic notation & symbols table handling
- + Data types
- + Programming Functions and their applications (timers, counters, comparators, jumps etc)
- + Continuous (Analog) signal programming
- + Commissioning & Monitoring /. Modifying Variables
- + Linear / Structured Programming Techniques



CERTIFICATE IN CONTROL SYSTEM / AUTOMATION ENGINEERING IU (Allen Bradley)

Course Content

- + Debugging (troubleshooting) a program
- + Binary operations & gates
- + Downloading and uploading a program
- + Configuration & addressing of modules
- + Data handling including arrays & structures
- + Diagnostics with B, I, L stacks
- + Program, troubleshoot and maintain continuous signal field devices such as level meters, VFDs, temperature sensors, pressure sensors, modulating valves etc
- + PLC troubleshooting and maintenance
- + Process control using PID loop programming (with practical sessions)
- + Introduction to process controls
- + Open and close loop controls
- + Introduction to PID concept and applications
- + PID programming
- + PID tuning
- + HMI using Rs View
- + Introduction to HMI systems
- + Security and passwords
- + Object properties and animations
- + Alarms
- + Bars and trends
- + Tags e.tc

CERTIFICATE IN CONTROL SYSTEM / AUTOMATION ENGINEERING (Allen Bradley)

Course Overview

At the end of the course, you will

- + Set-up, wire and program Siemens PLC control systems from scratch
- + Troubleshoot basic programs, trace faulty Allen Bradley PLCs /modules and replace them
- + Perform basic and advanced PLC programming
- + Setup- program and operate field devices such as level meters, flow meters, VFDs, modulating valves etc
- + Design process control systems with PID loop programming
- + Modify existing programs for different applications
- + Design user friendly Human Machine interfaces

Course Content

- + Introduction to PLCs
- + PLC set-up and wiring
- + Establishing communication with PLCs
- + PLC programming with ladder logic
- + RS Logix 500,5000 installation techniques & components
- + Creating projects
- + Hardware configuration (basic and Advanced)
- + CPU Properties
- + Symbolic notation & symbols table handling
- + Data types
- + Programming Functions and their applications (timers, counters, comparators, jumps etc)
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- + Commissioning & Monitoring /. Modifying Variables
- + Linear / Structured Programming Techniques

CERTIFICATE IN CONTROL SYSTEM / AUTOMATION ENGINEERING (Allen Bradley)

Course Content

- + Introduction to PLCs
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- + Establishing communication with PLCs
- + PLC programming with ladder logic
RS Logix 500,5000 installation techniques & components
- + Creating projects
- + Hardware configuration (basic and Advanced)
- + CPU Properties
- + Symbolic notation & symbols table handling
- + Data types
- + Programming Functions and their applications (timers, counters, comparators, jumps etc)
- + Continuous (Analog) signal programming
- + Commissioning & Monitoring /. Modifying Variables
- + Linear / Structured Programming Techniques

INDUSTRIAL NETWORKS AND SYSTEM INTEGRATION

Course Overview

At the end of the course, you will

- + Have a deep understanding of leading fieldbus systems such as Modbus, PROFIBUS, PROFINET, Ethernet/IP and DeviceNet
- + Integrate PLCs and HMIs from different manufactures in a control system
- + Configure and write programs for communication between PLCs from the same manufacturer and different manufacturers
- + Configure OPC Clients and Servers to interface with PLCs.

Course Content

Introduction to Field Bus Systems (Modbus, Profibus, ControlNet, DeviceNet, Interbus, e.t.c)

MODBUS

- + Introduction to MODBUS TCP and RTU
- + Physical Layer
- + Physical Structure
- + Register Structure
- + Function Codes
- + Master, Slave, Client and Server device concepts
- + Configuration of a MODBUS TCP and RTU device, (VFD, Soft starters, PLCs)
- + Reading and Writing Data from a generic Modbus Device
- + Controlling an AC Drive with MODBUS RTU/TCP
- + Connecting an HMI/SCADA system to a PLC with Modbus
- + Communication between PLCs using MODBUS TCP and RTU

PROFINET AND PROFIBUS

Introduction to PROFINET and PROFIBUS DP
Understanding the Master/Slave and

INDUSTRIAL NETWORKS AND SYSTEM INTEGRATION

Course Content

- + Client/Server Concept
- + Controlling AC Drives with PROFIBUS DP
- + Communication between PLCs and remote IOs using PROFIBUS
- + Communication between Siemens PLCs (S7 300 to S7 300,S7-300 to S7 1200) using S7
- + Communication (PUT and GET,BSEND and BRECV) using PROFINET
- + Communication between Siemens PLCs using PROFIBUS DP
- + Communication Between Siemens PLCs using Open User Communication (TSEND,T_RECV,TCON,TDISCON)
- + Communication between PLCs using PROFINET- IO
- + Controller and IO-device for remote communication
- + Configuration of S7 300 Communication Processor
- + Communication between Siemens and Third Party PLCs (Allen Bradley and Schneider)
Connecting Siemens PLCs to OPC Server Applications

ETHERNET/IP, DEVICENET, MODBUS

- + Introduction to Common Industrial Protocol(CIP): DeviceNet, ControlNet, Ethernet/IP
- + Understanding the Master/Slave and Client/Server Concept
- + Controlling AC Drives with Modbus RTU
- + Communication between Allen Bradley PLCs (CompactLogix to CompactLogix) using Produced and Consumed Tags
- + Communication Between CompactLogix PLCs using MSG instructions
- + Communication between Micrologix and CompactLogix PLCs
- + Communication between Allen Bradley and Third Party PLCs (Siemens and Schneider)

INDUSTRIAL NETWORKS AND SYSTEM INTEGRATION

Course Content

- + Connecting Allen Bradley PLCs to smartphones, Tablets and other Web-enabled devices for remote monitoring
- + Connecting Allen Bradley PLCs to OPC Server Applications

SYSTEM INTEGRATOR

- + Communication between PLCs from different manufacturers
- + Connecting HMIs to third party PLCs
- + Introduction to OPC Servers
- + OPC Server Configuration to connect PLCs from different manufacturers
- + Connecting OPC Clients (SCADA) to an OPC Server
- + Configuring an OPC UA Server
- + Connecting OPC UA Server to an OPC UA Client

REMOTE MONITORING

- + Configuration of Webservers for PLCs
- + Connecting Siemens PLCs to smartphones, Tablets and other Web-enabled devices for remote monitoring
- + Connecting Mobile Apps to a PLC using OPC-UA over the internet

INDUSTRIAL NETWORKS AND SYSTEM INTEGRATION

Course Content

- + Connecting Allen Bradley PLCs to smartphones, Tablets and other Web-enabled devices for remote monitoring
- + Connecting Allen Bradley PLCs to OPC Server Applications

SYSTEM INTEGRATOR

- + Communication between PLCs from different manufacturers
- + Connecting HMIs to third party PLCs
- + Introduction to OPC Servers
- + OPC Server Configuration to connect PLCs from different manufacturers
- + Connecting OPC Clients (SCADA) to an OPC Server
- + Configuring an OPC UA Server
- + Connecting OPC UA Server to an OPC UA Client

REMOTE MONITORING

- + Configuration of Webservers for PLCs
- + Connecting Siemens PLCs to smartphones, Tablets and other Web-enabled devices for remote monitoring
- + Connecting Mobile Apps to a PLC using OPC-UA over the internet

CERTIFICATE IN CONTROL SYSTEM / AUTOMATION ENGINEERING IU (Allen Bradley)

Course Overview

At the end of the course, you will

- + Set-up, wire and program Siemens PLC control systems from scratch
- + Troubleshoot basic programs, trace faulty Allen Bradley PLCs /modules and replace them
- + Perform basic and advanced PLC programming
- + Setup- program and operate field devices such as level meters, flow meters, VFDs, modulating valves etc
- + Design process control systems with PID loop programming
- + Modify existing programs for different applications
- + Design user friendly Human Machine interfaces

Course Content

- + Introduction to PLCs
- + PLC set-up and wiring
- + Establishing communication with PLCs
- + PLC programming with ladder logic
- + RS Logix 500,5000 installation techniques & components
- + Creating projects
- + Hardware configuration (basic and Advanced)
- + CPU Properties
- + Symbolic notation & symbols table handling
- + Data types
- + Programming Functions and their applications (timers, counters, comparators, jumps etc)
- + Continuous (Analog) signal programming
- + Commissioning & Monitoring /. Modifying Variables
- + Linear / Structured Programming Techniques

CERTIFICATE IN CONTROL SYSTEMS/AUTOMATION ENGINEERING (Allen Bradley)

Course content cont.

- + Debugging (troubleshooting) a program
- + Binary Operations and gates
- + Downloading and uploading a program
- + Configuration and addressing of modules
- + Data handling including arrays and structures
- + Diagnostics with B, I, L stacks
- + Program , troubleshoot and maintain continuous devices such as level meters, VFDs, temperature sensors, pressure sensors, modulating valves, et.c

- + PLC troubleshooting and maintenance
- + Process Control using PID loop programming. (with practical lessons).

- + Introduction to process controls
- + Open and close loop controls.
- + Introduction to PID concept and applications
- + PID programming
- + PID tuning
- + HMI using Rs View
- + Introduction to HMI systems
- + Security and Passwords
- + Object properties and animations
- + Alarms
- + Bars and trends
- + Tags e.t.c

INDUSTRIAL NETWORKS AND SYSTEM INTEGRATION.

Course Overview.

- + Have a deep understanding of leading fieldbus system such as Modbus, PROFIBUS, PROFINET, Ethernet/IP and DeviceNet
- + Integrate PLCs and HMIs from different manufacturers in a control system
- + Configures and write programs for communication between PLCs for the same manufacturers and different manufacturers
- + Configure OPC Clients and Servers to interface with PLCs

Course Content

- + Introduction to Field Bus Systems (Modbus, Profibus, ControlNet, DeviceNet, Interbus, et.c)

MODBUS

- + Introduction to MODBUS TCP and RTU
- + Physical Layer
- + Physical Structure
- + Register Structure
- + Function Codes
- + Master, Slave, Client and Server device concepts
- + Configuration of a MODBUS TCP and RTU device, (VFD, Soft Starters, PLCs)
- + Reading and writing Data from a generic Modbus Device
- + Controlling an AC Drive with MODBUS RTU/TCP
- + Connecting an HMI/SCADA system to a PLC with Modbus
- + Communication between PLCs using MODBUS TCP and RTU

PROFINET AND PROFIBUS

- + Introduction to PROFINET and PROFIBUS DP
- + Understanding the Master/Slave and Client/Server Concept
- + Controlling AC Drives with PROFIBUS DP
- + Communication between PLCs and remote IOs using PROFIBUS

INDUSTRIAL NETWORKS AND SYSTEM INTEGRATION.

Course content cont.

SYSTEM INTEGRATOR

- + Communication between PLCs from different manufacturers
- + Connecting HMIs to third party PLCs
- + Introduction to OPC servers
- + OPC Servers Configuration to connect PLCs from different manufacturers
- + Connecting OPC Clients (SCADA) to an OPC Server
- + Configuring an OPC UA Server
- + Connecting OPC UA Server to an OPC UA Client

REMOTE MONITORING

- + Communication between PLCs from different manufacturers
- + Connecting HMIs to third party PLCs
- + Introduction to OPC servers
- + OPC Servers Configuration to connect PLCs from different manufacturers
- + Connecting OPC Clients (SCADA) to an OPC Server
- + Configuring an OPC UA Server
- + Connecting OPC UA Server to an OPC UA Client

INDUSTRIAL NETWORKS AND SYSTEM INTEGRATION.

Course content cont.

SYSTEM INTEGRATOR

- + Communication between PLCs from different manufacturers
- + Connecting HMIs to third party PLCs
- + Introduction to OPC servers
- + OPC Servers Configuration to connect PLCs from different manufacturers
- + Connecting OPC Clients (SCADA) to an OPC Server
- + Configuring an OPC UA Server
- + Connecting OPC UA Server to an OPC UA Client

REMOTE MONITORING

- + Communication between PLCs from different manufacturers
- + Connecting HMIs to third party PLCs
- + Introduction to OPC servers
- + OPC Servers Configuration to connect PLCs from different manufacturers
- + Connecting OPC Clients (SCADA) to an OPC Server
- + Configuring an OPC UA Server
- + Connecting OPC UA Server to an OPC UA Client

MODULE 3

ELECTRICAL TRAINING

ELECTRICAL TRAINING

Course Content

At the end of this course, you will

- + Basics of Relays, Contactor, MCB, MCCB, ELCB, ACB, SDF e.t.c
- + Working Details of different types of Electric Motors
- + Designing of Control Circuits Using Contactors, Relays, Timers e.t.c
- + DOL, Star Delta Starter Designing For 3 Phase Motors With specification
- + Motor Drives - AC Drives and DC Drives
- + Programming and Installation of VFDs
- + Discrete and Continuous Speed Control Using VFDs
- + Safety and Management Concepts Of Designing A Project
- + Different types of Panels
- + Data Types
- + Basic Components To Be Installed In A Panel
- + Wiring Details Of Panel
- + Specification And Physical Dimension Of Components
- + Earthing and Cabling Of Panels - Standard Procedures
- + P & I Diagram Preparation

MODULE 4

SMART HOME AUTOMATION

SMART HOME AUTOMATION COURSE

Course Overview

At the end of this course, you will

By the end of this module, you should fully understand Wi-Fi and be able to make a good decision as to how to improve your Wi-Fi to support your new smart home.

This module learning content will supercharge your knowledge of AI and voice assistants within the context of a smart home.

You should fully understand smart alarms and be able to make a good decision as to how to move forward with using smart home alarms to improve home security levels.

You will be taught how you will add intelligence to your lights. Various smart lighting products will be covered ranging from smart bulbs and switches to smart outlets and plugs.

You will learn the key benefits, technologies, and installation steps associated with smart thermostats.

Course Content

Implement a Smart Home Wi-Fi Mesh System

- + Do I need improved Wi-Fi?
- + How to improve your home system Wi-Fi
- + Secure your Wi-Fi Network
- + How to set-up a nest Mesh System
- + Implement a Smart Home Wi-Fi Mesh System

Choose a Smart Home Ecosystem

- + Understanding AI and Voice Assistants
- + Meet the smart speaker
- + Smart Speaker Privacy
- + How to install and set up smart speakers

SMART HOME AUTOMATION COURSE

Course Content (cont.)

Setup A Smart Home Wireless Security Alarm System.

- + Smart Alarms Overview
- + Smart alarms building blocks
- + Planning and implementing a smart alarm
- + How to install and set up smart alarm systems
- + How to install, set up and connect your smart alarms to your smart speakers.
- + Setup a smart home wireless security alarm system

Add Smart Lighting To Your Home

- + Understanding smart lighting
- + Introduction to Smart Bulbs
- + Smart switches overview
- + Smart Plugs and Outlets overview
- + Smart wired lighting
- + How to connect your smart lighting to your smart speakers.

Add Smart Camera to Your Home and Life

- + Smart Cameras Introduction
- + Key Smart Camera feature
- + Plan and install smart cameras
- + How to connect smart cameras to your smart speakers

Install a Fire Alarm System

- + Importance of Smart Safety
- + Inside smart smoke alarms
- + Planning and Installing smart alarms
- + How to install a smart safety device

SMART HOME AUTOMATION COURSE

Course Content (cont.)

Add Smart Home Automation Functionality

- + About smart home automation
- + Popular automation
- + How to setup home automations



SMART HOME AUTOMATION COURSE

Join our intensive smarthome and automations training

Learn how to install premium smarthome appliances in homes of the future

CATEGORY 1 (A one-week intensive smart home and automation training). This covers:

- + Electrical Guidelines
- + Basic Network Training
- + Hardware Integration
- + Automation Process
- + Voice control
- + Routines and scenes
- + Surveillance Automation
- + Smart Security System
- + Fire Alarm Automation
- + Training Handbook
- + Smart Home Certification.

CATEGORY 2 (A one-week intensive smart home and automation training with 1-week of field work training). This covers:

- + Electrical Guidelines
- + Basic Network Training
- + Hardware Integration
- + Automation Process
- + Voice control
- + Routines and scenes
- + Surveillance Automation
- + Smart Security System
- + Fire Alarm Automation
- + Dynamic Staircase Lighting
- + Field Training
- + Training Handbook
- + Smart Home Certification

MODULE 5

MECHANICAL TRAINING / DESIGN COURSE

MECHANICAL TRAINING / DESIGN COURSE

Course Overview

At the end of this course, you will understand:

Pressure Vessels design, inspection and materials selection.

Heat exchangers types, design and failure analysis

Valves types, sizing and material selection

Piping system design, inspection and fitness for service

Pumps, and compressor types, sizing and problems

Turbines main components and failure analysis.

Course Content

- + Pressure Vessels (Static Equipment)
- + Pressure Vessel Parts and Service Classification.
- + Overview of ASME VIII-1
- + Material Selection, Designation and Essential Properties
- + Corrosion, Types, Allowances and Protection
- + Overview of API pressure vessel inspection
- + Non-Destructive Examination

Heat Exchangers (Static Equipment)

- + Classification of Heat Exchangers
- + Overview of TEMA
- + Design of Shell and Tube Heat Exchangers
- + Design of Air Cooled and Plate Heat Exchangers
- + Overview of API 660 and API 661
- + Heat Exchangers Failure Mechanisms

Valves and Piping (Static Equipment)

- + Valves Types and Characteristics
- + Valves Components, Selection and Materials
- + Valves and Actuators Sizing
- + Piping Systems and Pipe Materials and Coatings
- + Overview of API 570 - Inspection and repair of Pipelines
- + Fitness for Service, API 579 Overview

MECHANICAL TRAINING / DESIGN COURSE

Course Content (Cont.)

Pumps and Compressors (Rotating Equipment)

- + Pump Types and Performance Curves
- + NPSH and Cavitation
- + Pump Selection and Sizing
- + Types of Compressors and Performance Curves
- + Surge, Stall and Chocking

Turbines (Rotating Equipment)

- + Classification of Turbines
- + Gas turbines Main Components and Control
- + Steam Turbines Main Components and Control
- + Turbine Materials and Coatings
- + Failure Analysis of Gas Turbine Components
- + Failure Analysis of Steam Turbine Components.



LIGHT AUTOMATION
ACADEMY

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Corporate Head Office: No 3
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LIGHT AUTOMATION ACADEMY TECHNICAL TRAINING PROGRAMME

THERE ARE PEOPLE WITHOUT JOBS AND JOBS
WITHOUT PEOPLE

The skill gap is real, and it's only getting wider.

What is the Skills Gap?

It's the shortage of skilled, trained people. It's the difference between what workers know how to do and what employers need.

This program is intended for young people who want to develop their knowledge and skills using the latest technology.

We are equipped and experienced and have prepared ourselves to help you in your career journey.

You will be given an opportunity to join us in the field for projects

This program combines the two most sort after skills in the world.

Industrial Automation:

- PLC Programming
- Visualization (HMI and SCADA)
- Motion (Drives, Motor, Servo)
- Sensor Technology

Smart Home Automation

- Loxone Smart Home
- KNX
- Google Home
- Amazon Alexa
- Raspberry Pi
- Multimedia
- Access Control
- Gate Automation
- Networking
- Smart Cameras
- Smart Sensors

Application Requirements

What do I need?

We are looking for bright and determined school leavers from all educational backgrounds from age 14 and above. The ideal person is:

- **Just finishing or finished Secondary School**
- **Open-minded and curious about the world**
- **Looking to gain a skill needed in the industries**
- **Looking to become an installer**
- **Keen to contribute to a challenging and diverse environment**

Program Duration

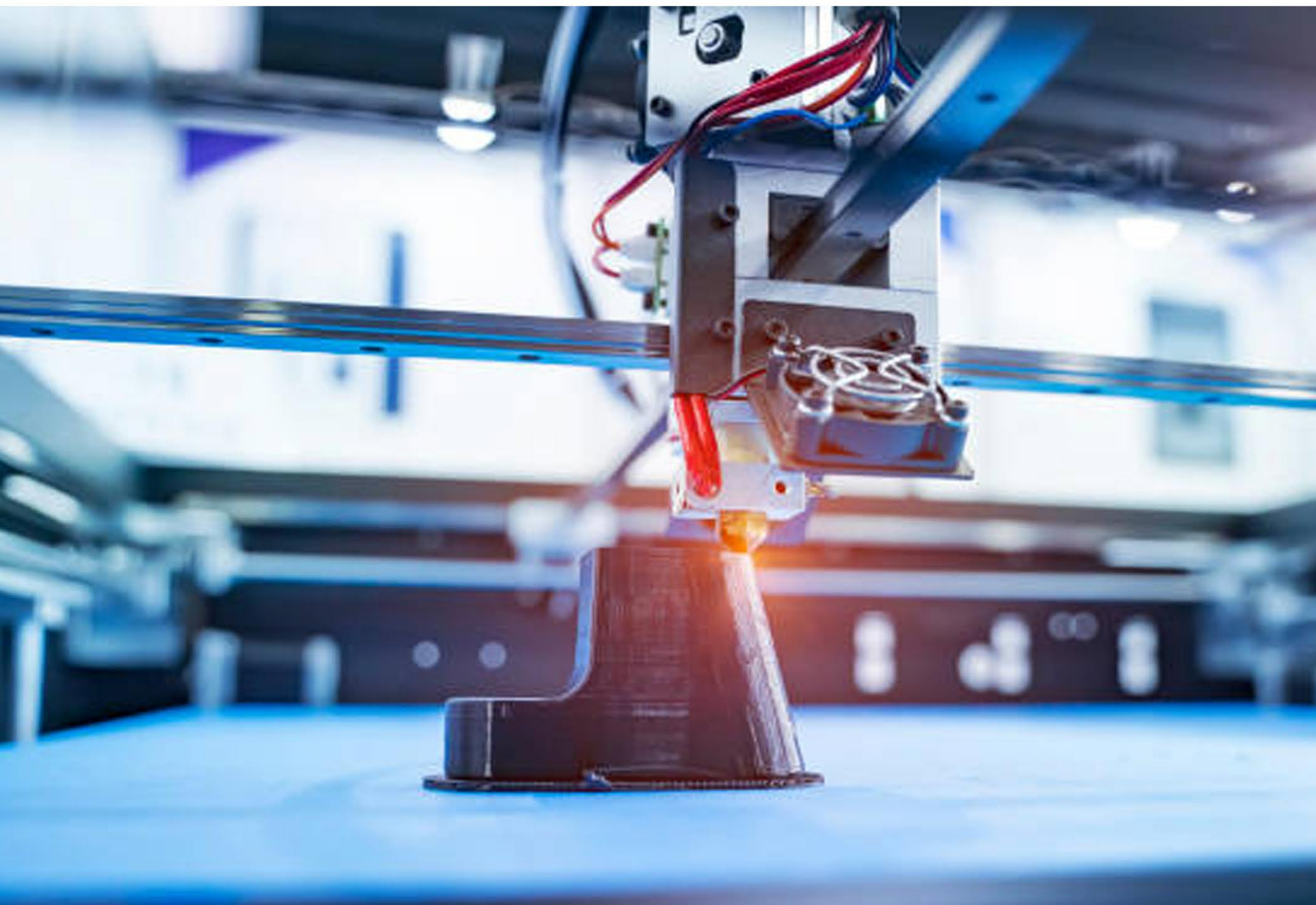
6 Months and 12 Months

What's next after the training?

- We recommend students to industries for employment opportunities
- We register students on our installer database for Discounted offers on all products needed for projects
- Continuous Mentorship and Support when needed

We are looking for talented young people who want to take on the challenges of tomorrow. Think this is you? Join us now, don't wait any longer!

Nobody has ever come to Light Automations and doesn't know it.



TERMS AND CONDITIONS

FEES

All course fees / invoices must be paid in full no later than 14 days prior to the start of the course. Your course is not confirmed until payment has been received. Each fee is inclusive of Documentation, Lunch and refreshments served during the entire seminar.

MODE OF PAYMENT

The delegate has the option to pay the course fee directly or request to send an invoice to his / her company / sponsor. Bank Transfer, Paypal and Cash payments are acceptable.

HOTEL ACCOMMODATION

is not included in the course fee. A reduced corporate rate may be available for attendees wishing to stay at the hotel venue. All hotel accommodation is strictly subject to availability and terms and conditions imposed by the terms and conditions of the hotel.

CERTIFICATE OF TRAINING

A certificate of training will only be awarded to those delegates who successfully complete/attend the entire training within the speculated period.

CANCELLATION / SUBSTITUTION

We regret that we are unable to refund any fee after payment has been made.

PAYMENT DETAILS

- + Please Invoice my Company
- + Please Invoice Me

CERTIFICATION

Successful participants will receive LIGHT ACADEMICS Certificate of Completion

CONTACT AND ADDRESS

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