

## About Innovians Technologies

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**Innovians Technologies** is one of the premiere quality training providers across country and has delivered various training program all across India & in many countries. Innovians Technologies are the India's fastest growing company in the field of Practical Educational Training, Professional Training, Corporate Training, Web & IT Services, with most advanced technologies & experience in hand. Innovians Technologies delivers interactive training & workshops which equip its participants with better practical understanding and preparation for jobs in industry. The hands-on sessions and lectures are designed based on current industry trends and draw on the rich experience of instructors and organizers.

## Objective of the Workshop

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**The Main Objective** of this Workshop is to make the aspiring engineers acquainted with the conceptual as well as practical knowledge of the Industrial Automation & Latest Technologies being used to achieve Industrial Automation. The idea of Organizing this Workshop is to inculcate the basic fundamentals of Automation in the students and provide them with a platform to work on, in the near future.

The most used guiding force behind an Automated Industrial Plant as a “**Programmable Logic Controller**” generally known as a **PLC**. **PLCs** along with certain other necessary ingredients like Sensors, Motors, Actuators, Valves, Conveyors, Boilers, SCADA Systems, Computers & many more, makes a real automated manufacturing plant.

## What is Industrial Automation?

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Automation is basically the delegation of human control function to technical equipment. It is the use of control systems such as computers, PLCs, Microcontrollers to control machinery and processes to reduce the need for human sensory and mental requirements as well.

Industrial Automation i.e. to "Automate Industry" is the basic need of almost every type of manufacturing and production unit today. Food/ Beverage, Metal, Mining, Power, Textile, Petrochemical, Machine Manufacturing, Automobile etc are the few examples where we see the automation today.

## Why we need Industrial Automation?

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- I. To Increase Labor Productivity
- II. To Reduce Labor Cost
- III. To Mitigate The Effects Of Labor Shortages
- IV. To Reduce Or Remove Routine Manual And Clerical Tasks
- V. To Improve Worker Safety
6. To Improve Product Quality
- VI. To Reduce Manufacturing Lead Time
- VII. To Accomplish What Cannot Be Done Manually
- VIII. To Avoid The High Cost Of Not Automating

## Topics to be Covered in Workshop

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### **Module I: Presentation on Recent Trends in Industrial Automation & PLC-**

#### **SCADA (Duration 2 Hours)**

- Introduction To Automation
- Why We Need Automation
- Where Automation?
- Evolution In Industrial Automation (A Brief History)
- Different Type Of Industrial Control Mechanisms
- Introduction To PLCs
- PLC Advantages Over Microcontrollers
- Area Of Applications
- DATA Flow During Automation
- Motor Drives Introduction & Their Need
- Sensors Introduction & Their Need
- HMI Introduction & Its Need
- SCADA Introduction & Its Need

### **Module II- Detail study of PLC & SCADA (Duration 3 Hours- Hands On)**

- PLC
- SCADA

### **Module III- PLC I/Os Basics, Burning & Interfacing Concepts (Duration 1 Hours- Hands On)**

- Allen Bradley & Rockwell Automation's Details
- Brief Description To Input/ Output Pins Of Micrologix-1000
- Ladder Diagram Basics
- Introduction To RSLogix
- Downloading A Ladder Program In PLC Using RSLinx.
- How To Take Input From Panel
- How To Give Output To Panel
- Running First PLC Application

### **Module IV- SCADA Programming on Wonderware InTouch (Duration 3 Hours- Hands On)**

### **Module V- Hands on Session on PLC Training Kit which contains Allen Bradley Micrologix 1000 PLC (Duration 3 Hours- Hands On)**

**Software Used: RsLogix, RSLinx, RsLogix Simulator, Wonderware InTouch SCADA.**

### **Module VI- Competition.**

## **Benefits**

This workshop will be beneficial for students in following ways:

- Learn how to do Automation in Manufacturing Industries.

- Firstly, the workshop gives a student an insight of the Industrial Automation along with practical implementation.
- Complete Hands-on session along with Theory sessions step by step.
- We will share all the software's, presentation, study guide & other Tools and Techniques covered in the Workshop with all the students.
- Students get to work with the Working Professionals from Automation Industry and get to match up their Knowledge and Experience.

### **Workshop Arrangements Details:**

- Seminar hall/classroom having a capacity enough to conduct hands-on-session for all participants.
- Good Quality public address system ideally two cordless mikes will be required.
- Projector/ Screen along with black/white board for teaching and presentation purposes.
- One Computer System will be required with Windows XP (Only Desktop)
- One Computer System will be required with Windows 7 (Only Desktop)
- One small stereo jack cord to connect in laptop for its sound system.
- **Students will have to bring their own laptop at-least One Laptop in a Group of a 3.**
- Extension cords for charging of Laptops for the students if required.
- Backup during power failure.

### **Pre-requisite**

There are no pre-requisite for attending this workshop. Anyone interested can participate in this workshop.

**Duration: 2 Days (6-7 Hours per day)**