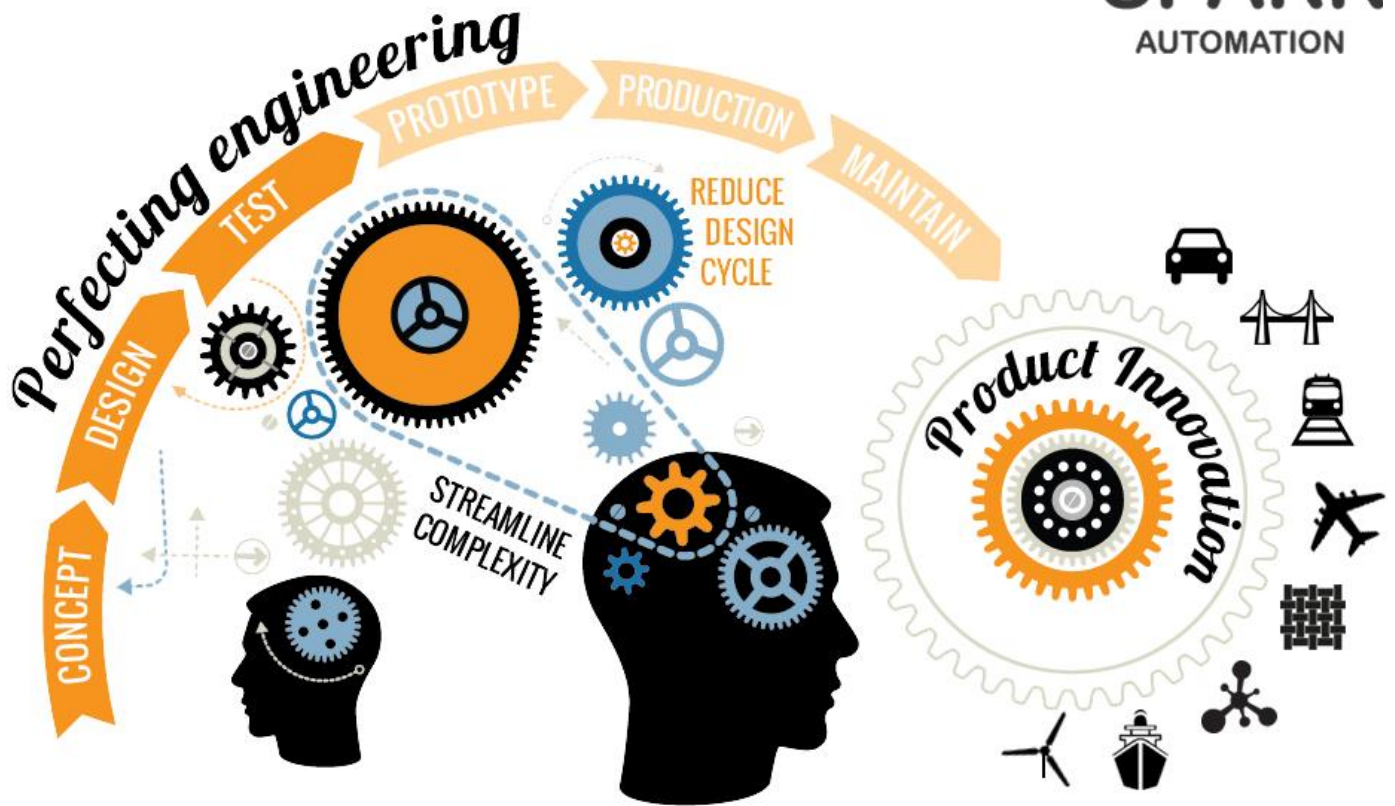




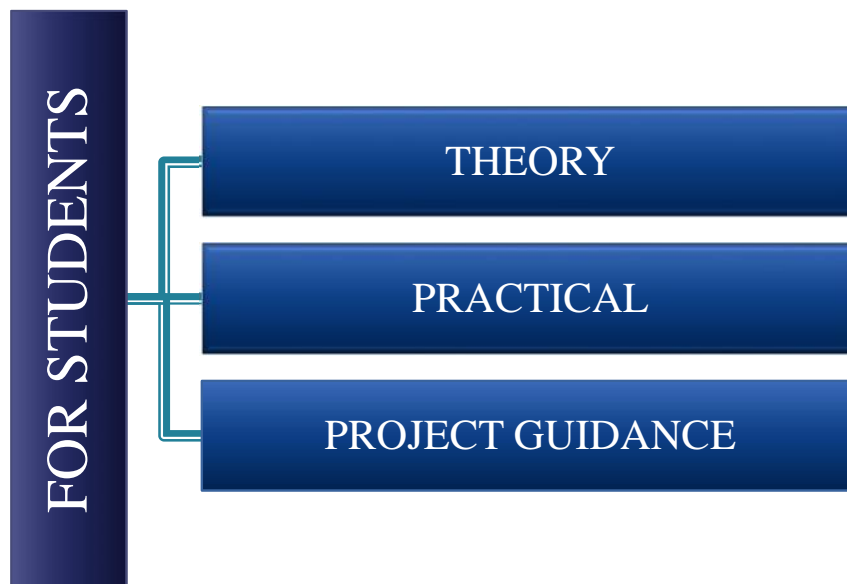
**SPARK**  
AUTOMATION



# INDUSTRIAL TRAINING CENTRE

GIVE A SPARK TO YOUR SKILLS AND IDEAS

## INDUSTRIAL COURSES OFFERED BY US



### ELIGIBILITY:-

- **Students of Electrical, IC, EC, Mechatronics.**
- **Must be 3<sup>rd</sup> or 4<sup>th</sup> year of Engineering or Higher.**
- **ITI Electricians with working experience.**

# COURSE CONTENT:-

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## 1. INTRODUCTION

- What is automation ?
- Requirement of automation in industry.
- What is PLC, HMI, Drives.

## 2. PLC IN DEPTH

- Overview of PLC.
- Development of PLC.
- Main role of PLC in Automation.
- PLC types & ranges.
- Accessories & parts of PLC.
  - Power Supply
  - CPU
  - I/O Modules
  - Communication Devices/Bus



## COURSE CONTENT:-

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### 3. PLC PROGRAMMING

- Standard make of PLCs available in market.  
(Allen Bradley, Siemens, ABB, Mitsubishi, Schneider)
- Understanding of Bit, Byte, Word, Dword & addresses.
- Concepts of programming in PLC.
- Basic instructions of ladder programming
  - NO, NC, Coil, Set, Reset
  - Positive/Negative Edge
  - On Timer, Off Timer
  - Up Counter, Down Counter
  - Addition/Subtraction/Multiply/Division
  - <, >, <=, >=, =, <>
  - Move Instruction Set
  - Copy Instruction
  - Zone Reset, Zone Compare Instructions
  - Configuration of Analog Inputs & Outputs
  
- Communication & upload/download program
- Understanding of Advanced programming
- Process controls
  - Understanding control loops
  - Control solenoid valves
  - Open loop, Close loop

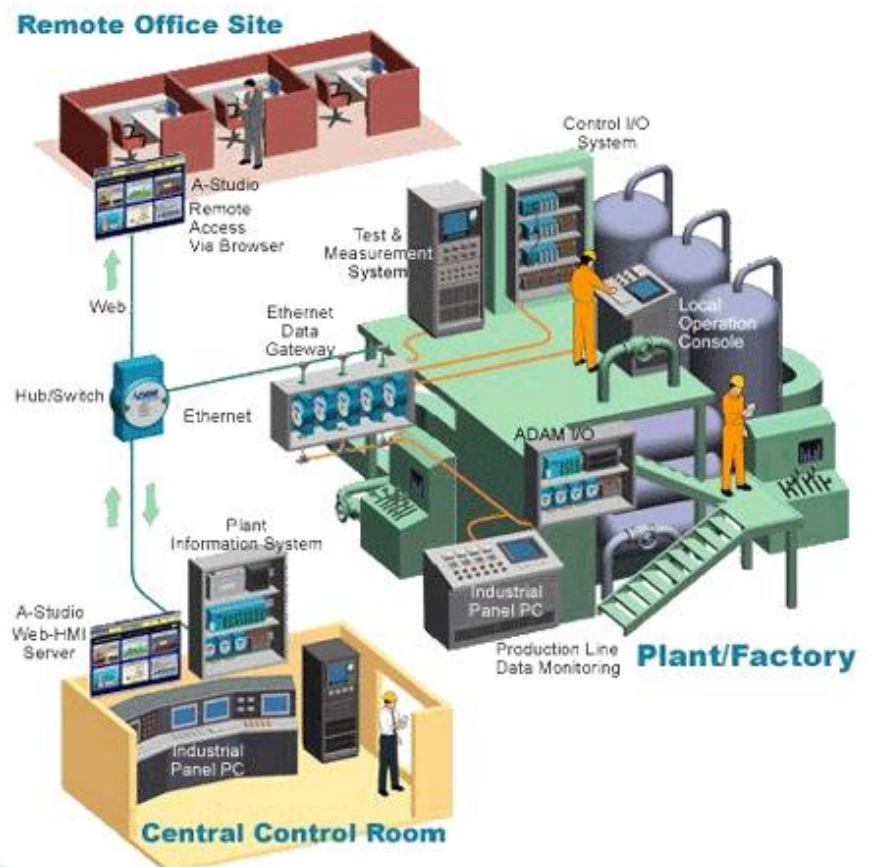




## COURSE CONTENT:-

### 4. PRACTICAL EXPOSURE OF PLC PROGRAMMING

- Explanation of how to write ladder program
- Actual industrial type program explanation
- Case study on 3 industry based project Programming
- Fault Diagnostics.
- Project documentation - make it user friendly.
- Assignments of Real Time Programming.



## COURSE CONTENT:-

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### 5. HMI - HUMAN MACHINE INTERFACE

- What is HMI ?
- Introduction and Selection
- Basics of HMI programming
- Application development
- Setting parameters & configuration
- Making of MIMICs & Screens
- Connectivity, Upload & Download
- Events, Alarms, Security
- Communication with PLC
- Troubleshooting & Diagnostics



## COURSE CONTENT:-

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### 6. PRACTICAL EXPOSURE OF PROGRAMMING-HMI

- Explanation of how to make application.
- Actual industrial type program explanation.
- Case study on 3 industry based project programming.
- Case study on troubleshooting & fault diagnostics.
- Project documentation- make it user friendly.
- Assignments of real time programming.



## COURSE CONTENT:-

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### 7. PRACTICAL EXPOSURE OF ONE PROJECT ON PLC AND HMI

- Guidance on how to execute a project.
- Project execution and troubleshooting.
- Hardware and software will be given on rental basis.



### CONTACT

Mr. Vishal Patel  
+91-9879977009  
Vishal@sparkautomation.in

### SPARK AUTOMATION

167 Shukan Mall,  
Opp. CIMS Hospital,  
Science City Road, Solagam,  
Ahmedabad - 380060