COURSES DETAIL FOR SEMINAR AS DISCUSSED

Module 1: ATIA (Advance Training In Industrial Automation)
Duration: 50 hrs.
· *Programmable Logic Controllers*
· *Supervisory Control & Data Acquisition*
· *Motion Control (Drives & Motors)*
· *Panel Designing& AutoCAD*
· *Process Instrumentation*
· *HMI (Human Machine Interface)*
· *Industrial Networking*
· *Distributed Control System*
· *Soft Skill Development*

Programmable Logic Controllers
· Digital Electronics Basics
· PLC Fundamentals, PLC Hardware & Architecture
· Wiring Different field Devices to PLC
· Creating applications with Programming Software
· Programming Languages, Basic Instructions
· Load /and /or/out / and Read / Write instructions
· Compare / Add / Sub /And /Or – Blocks instructions
· Move, File Handling, Timer, Counter block
· Master control /set /reset function
· Advance Instructions,
· Upload / Download / Monitoring of programs
· Forcing of I/Os, Fault finding / troubleshooting&
  Documentation
· Monitoring/Modifying Data table values
· Communication with SCADA software
· Hands on experience on real time applications

Supervisory Control & Data Acquisition
· Introduction to SCADA Software
· Creating New SCADA Project
· Creating database of Tags
· Creating & Editing Graphic display
· Attaching controls to graphic objects, Sizing,
Blinking, Filling, Analog Entry, Movement of
Objects, Visibility

· Real time & Historical Trending
· Creating Alarms & Events
· Application of scripts
· Communication with PLC/excel/different protocols
· Net DDE Communication
· Fault finding / Troubleshooting

Motors & Variable Speed Drives

· AC Motors, Operations & limitations
· Starters: DOL, Star-Delta, Auto Transformer
· Motor control circuits, Interlocking, Inching and
Reversing etc.
· Introduction to AC Drives & Applications
· Criteria for Drives Selection
· Parameter Programming
· Designing of Drive Control panel
· Communication with PLC
· Fault finding / Troubleshooting
· Soft starters & their advantages over conventional starters

Process Instrumentation

· Various types of Transmitters / sensors used in industrial
Applications
· Position sensors: Photoelectric, Proximity, Encoders
· Temperature Measurement (RTD, Thermocouple, thermistor)
Working principle, types, selection guidelines)
· Flow Measurement, Working principle, types, selection
Guidelines
· Pressure Measurement, Working principle, types, selection
Guidelines
· Level Measurement, Working principle, types, selection
Guidelines
· Load measurement, Load cells
· Solenoid valves, Control valves, Smart transmitters
· Instrument transformers (CT, VT)
· Process control Basics, Closed & Open loop control
· Process controllers (On-off, Proportional, PID)
· Getting started with HMI

HMI

. Creating applications, Creating Tags
· Downloading / Uploading programs
· Creating Alarm Messages
· Communication with PLC
· Fault Diagnostics

Industrial Networking/Wireless Technology (Ethernet, Control Net, Modbus, Profibus, Fieldbus)

Different Network Topologies & their importance
· Training on Nodes, Ports, Drivers, Hardware
· DH-485, Ethernet, Device Net, Control Net, Modbus, Profibus
· Hands-on practical on Networking of PLC.