



Content
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Connection

United States
The Electricity Forum Inc.
742 Pre Emption Road
Geneva, NY 14456
Tel 289-387-1025

Canada
The Electricity Forum
1885 Clements Rd, Unit 218
Pickering, ON L1W3V4
Tel 905-686-1040
Fax 905-686-1078
Toll Free 855-824-6131

Industrial Automation Training

Contact us Today for a FREE quotation to deliver this course at your company's location.

<https://www.electricityforum.com/onsite-training-rfq>

Industrial Automation is rapidly growing especially within the Power sector, Automobile, Oil and gas, Manufacturing, Mining etc. Process Automation provides the technology to control and monitor the process in industrial plants using concepts such as feedback, cascade, feed forward and advanced process control. According to an estimate provided by the International Society of Automation (ISA), 15,000 fresh automation engineers are required annually in the United States. This Industrial Automation course is designed to empower students with the foundation and intermediate level of knowledge that will help them to understand the three key modules of Industrial Automation: PLC, SCADA, and DCS.

Industrial robotics, controls and automated systems have been in general use in the manufacturing industry since the early 1980s. These industrial automation systems have seen wide acceptance in high-volume manufacturing for many years. As systems mature, they become cost effective for low-volume production in the local manufacturing sector. The integration of automation and industrial control systems, architectures and protocols has created a specific need to train industrial electrical and instrumentation staff on the development and maintenance of industrial automation systems.

WHO SHOULD ATTEND

Who is the online Industrial Automation training designed for?

- Graduates who like to gain skills to become an Automation Engineer
- Electrical and Instrumentation specialists who would like develop their career in Industrial Automation field
- Beginners want to learn the in-depth concepts of Automation technology and become a master of Industrial Automation concepts
- Automation Engineers who would like to know about the other key developments in Industrial Automation
- Experienced Engineers who want to upgrade their knowledge and skills and learn about trending technologies
- Engineering and Electrical Plant specialists who are looking for a course that can help them to learn Industrial Automation in an easy and efficient way

STUDENTS RECEIVE

COURSE BENEFITS

- This is a practical course with lots of examples provided by an expert in the field of Industrial Automation and Control Systems
- This Industrial Automation training course that helps participants understand and master the concepts of Process Automation, DCS, PLC, SCADA, MMI/HMI
- On successful completion of this Control Systems training, students will be ready to attend and succeed in interviews for DCS/PLC programmer positions
- This course is conducted by an experienced professional who has a wide range of experience and is a subject matter expert in Process Automation

COURSE OUTLINE

Industrial Automation Course

Course Instructor: Paul DeJong C.E.T., Northern Dynamics

Session 1 - PLC's

- North American

Rockwell Automation the Logix Family

- European

Siemens S7-1500 & S7-1200

- Asian

Omron NX/NJ and other Families

Panasonic

Mitsubishi MELSEC Families

- CODESYS based PLC's

Eaton, Schneider, ABB

Session 2 - HMI's / Scada

- One of the bigger growth areas, companies want Data
- Third party companies like Wonderware & Ignition
- Rockwell and Siemens platforms

Session 3 – Drives, Motion, Motors and Servos

- Drive Suppliers

Siemens, Rockwell, ABB

- VFD's, V/Hz VS Vector

Energy and maintenance savings

- Motors, Induction vs PM vs old DC

Energy Savings vs Maintenance and overall Costs

- Linear Motion

Energy Savings vs Pneumatic / Hydraulics

Session 4 - Networks and new Standards

- Ethernet variations

EtherNet/IP, EtherCat, ProfiNet, Modbus/TCP

- Old Networks

Profibus, Modbus/RTU, DH+

Session 5 – Sensors and Actuators

- Intelligent and Non-Intelligent Devices

IoT and CAN / DeviceNet networks

- Vision

Session 6 - Safety Products

- PLC's

Process of applying

- Discrete Products

Light Curtains

- Wired and Wireless products

Session 7 – Overview of the three main software packages

- Design Studio, Siemens TIA, Omron Sysmac Studio

PLC, HMI and Drive access

Session 8 – Further look at CODESYS and the IEC 61131-3 Standard

- PLC, HMI and Drive access
- Use with small embedded devices like RasPi and Arduino

Session 9 – HMI and Scada Software

- 3rd party packages like Wonderware & Ignition

Session 10 – Various Programming Languages

- Ladder Logic

History and use

- Function Block

Variations in Function Block languages

- Structured Text
- Statement list
- Regional Instruction set Variations

North American vs European vs Asian

Session 11 – Customization of code

- Migration to Tags vs old school address based
- UDT's and Data Blocks techniques like Arrays
- Libraries and making your own instructions
- Possible programming techniques

Sequential Programming compared to sequencer instructions

Company Based Standards

- Integration of IT based languages

Visual Basic, C-Based, Python

Web Programming and Integration

SQL Integration

Session 12 – Remote Access and Security

- Products Like Ewon
- Integration with IT security

Everything uses Ethernet now which opens more security challenges

- Standards

New OPC-UA vs OPC and DDE

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