Knowing how to manage industrial controls and being an industrial controls manager are two different things. Besides knowledge of controls, the industrial controls manager must also have skills in people management, project management and implementation. In addition, an industrial controls manager will know how to audit existing equipment, justify the purchase of new equipment, and install and maintain the new equipment.

This course will provide attendees with the knowledge and the tools required to successfully supervise and manage departments and groups involved in industrial control systems (manufacturing, sales, design, installation or maintenance).

**Highlights:**

- Human resources and training skills related to instrumentation and control
- Business development and the development of corporate standards
- Project management as related to industrial controls
- Auditing existing controls and justifying and purchasing new controls
- Installing and maintaining new industrial controls

**Who Should Enroll**

- Managers of personnel involved in the manufacturing, sales, design, installation or maintenance of industrial control systems.
- Personnel wishing to go into management of industrial control system related organizations such as manufacturers, consultants and end-users in all industries.
- Non-control trained personnel given the responsibility to supervise and manage control personnel, such as the manager of an electrical engineering or IT department to whom industrial control responsibilities are added.

**Complete Course Outline**

**SESSION 1 – ORGANIZATION**

- Overview
- Organization of industrial control teams
- Typical job titles and descriptions
- Management and engineering job descriptions
- Maintenance job descriptions

**SESSION 2 - HUMAN RESOURCES**

- Overview
- Recruitment and selection
- Motivation
- Training
- Rewards systems
- Performance reviews
- Trade unions and labor relations
Employment and human rights legislation
Health and safety

SESSION 3 – INDUSTRIAL CONTROL SYSTEMS
Overview
Industrial control systems
Distributed vs. centralized controls
Review of the existing control strategy
Plant business strategy
Steps in the successful implementation of control systems
Benefits of control systems
System specification
Advantages and disadvantages of control systems
Functionality of control systems

SESSION 4 - BUSINESS DEVELOPMENT
Overview
Managing for growth and survival
The life cycle of a service provider
Types of service providers
Basic tools for business development
Marketing
From proposal to purchase order
Fees
Maintaining client relationships

SESSION 5 - CORPORATE STANDARD DEVELOPMENT
Overview
Introduction to standard development
Purpose of corporate standards for industrial control
Preparing the preliminary standards
Issuing the preliminary standards for comments
Receipt and handling of comments
Finalizing the standards
Issuing the standards for use
Standard maintenance
Main components of corporate standards in industrial control
Philosophy, engineering, installation (check-out, commissioning, start-up), maintenance
Real life example

SESSION 6 – PLANT NEEDS AND DECISION MAKING
Overview
Introduction to the evaluation of plant needs
Step 1: the brainstorming session
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Step 2: the evaluation of ideas
Step 3: issuance of the report
Introduction to quantified decision analysis
The process of quantified decision analysis

SESSION 7 - JUSTIFICATION
Overview
The need for justification
Hurdles in the justification process
Vendor selection
Costs – the bottom line
Initial costs
Maintenance costs
Cost justification
Justification follow-up
Recalculation of the cost justification

SESSION 8 - PROJECT MANAGEMENT – THE BASICS
Overview
Project definition
Project charter
Managing projects
Industrial control projects
Communication
Standard and code compliance
Control scope and work definition for industrial controls
Control strategy
Contracts
Bidders

SESSION 9 - PROJECT IMPLEMENTATION – MANAGEMENT, SCHEDULE AND BUDGETS
Overview
Assembling the project team
Confidentiality agreements
Project kick-off meeting
Training
Project manager key skills
Project performance
Schedule and time management
Budget and cost estimates
Document control
Management of Change
SESSION 10 - PROJECT IMPLEMENTATION – ENGINEERING TO PROJECT CLOSING
Overview
Engineering
Front-end engineering
Detailed engineering
Engineering contractor scope of work
Packaged equipment supplier scope of work
Quality
Procurement
Vendor documents
PLC programming and documentation
Graphics, alarms, trends and reports
Control rooms
Equipment installation, commissioning, start-up
Project closing

SESSION 11 - EQUIPMENT INSTALLATION
Overview
Scope of work
Execution
Installation and mounting
Process tubing
Air tubing
Wiring

SESSION 12 – CHECK-OUT, COMMISSIONING AND START-UP
Overview
Organization
Safety equipment
Required Documents
Lock-out and tag-out procedures
Troubleshooting
Checkout
Commissioning
Start-up

SESSION 13 - MAINTENANCE
Overview
Implementation
Types of maintenance
Personnel
Training
Records
Hazards
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- Electrical isolation
- Programmable electronic systems
- Alarm and trip systems
- Calibration
- Calibration sheets
- Control equipment classification

SESSION 14 - AUDITING – THE BASICS

- Overview
- Purpose of auditing
- The auditing function
- Auditing existing controls
- Scope of work and time required
- Protocol
- Auditors
- Interviews
- Searching and reviewing documents
- Report
- Frequency

SESSION 15- AUDITING – MANAGEMENT, ENGINEERING, MAINTENANCE AND HARDWARE

- Overview
- Management
- Engineering records
- Maintenance
- Control equipment
- Control rooms
- Programmable electronic systems
- Alarm and trip systems

Certificate Requirements

The certificate is awarded after the completion of all quizzes. The participants must attain a minimum of 75 percent in the program. Participants have up to six months after enrolling to finish the course. The entire course is comparable to fifteen days of seminar training. Therefore, the certificate will state that the recipient has earned 12 Continuing Education Units (CEUs) or 120 Professional Development Hours (PDHs). However, the course does not carry any college credits and cannot be used as part of a degree-seeking program.

Course Materials

The class text will be mailed to students upon registration at no additional cost.
Title: Managing Industrial Controls
Author: N.E. Battikha
Online Certificate in Managing Industrial Controls

Additional course materials and copies of the lecture slides will be available for download from the class website.

Course Delivery

Each session is delivered as a recorded videos so attendees can view classes any time they wish. Class handouts and quizzes are also available on the University of Kansas learning management system. Attendees will receive an ID and password to enter the site.

Instructor Availability

While you are enrolled in the course, you can email the instructor with any questions that you have. He will reply within 2 business days.

Instructor

Bill Battikha is a registered professional engineer with over 30 years of experience in the field of Process Instrumentation and Control, working mainly in the U.S. and Canada. He holds a bachelor of science in engineering. He has produced and conducted Instrumentation and Control training courses for over 10 years at many universities in the U.S. and Canada and also at the ISA.
Bill’s engineering activities have covered the development of engineering standards and the generation of control philosophies and functional specifications. He has designed complete control systems, guided and inspected the work of engineering consultants, monitored contractors on-site, and personally carried on plant commissioning and startup.
Bill has written three books on Instrumentation and Control, all published by the ISA. He is also a member of many ISA committees that generate new standards. He has presented papers at many international conferences and has written numerous articles for major technical magazines.

Refund and Cancellation Policy

No refunds will be granted for this class once the student has accessed the Blackboard class site. A full refund of registration fees, less a $30 administrative fee, will be approved if requested in writing prior to accessing the course. Requests must be made within 60 days of payment. The cost of any text or course materials you have received will also be withheld from your refund.