



# ABB Engineering Services training courses - Development of professional engineers

## Process safety & loss prevention

- Electrostatic Hazards
- Fire Safety Management
- Hazard and Reliability Appreciation
- Hazard Assessment
- Hazard Study Leader's Course
- Health, Safety & Environmental Auditing
- HSE Protective Systems IEC 61508 Concepts and Management Requirements
- HSE Protective Systems IEC 61508 Concepts and Technical Requirements
- Human Factors in Occupational Safety Risk Assessment
- Incident Investigation
- Inherent Safety
- Introduction to Risk Quantification
- Management of Instrumented Protective Systems
- Managing HS&E Excellence
- Pressure Relief: A Proven Approach
- Process Hazard Review Leaders Course

## Mechanical integrity

- Awareness of Bearings, Gears and Seals
- Civil Engineering Awareness
- Design & Operation of Piping Systems
- European Machinery Legislation
- Gear Systems and Lubrication
- How to Improve Asset Lifecycle Performance
- Introduction to Pressure Systems
- Machines Appreciation
- Machines Condition Monitoring
- Machine Oil Analysis, Thermography & Temperature Monitoring
- Machine Vibration Analysis
- Materials Engineering
- Mechanical Seal Fundamentals
- Plant Inspection
- Plain Bearings and Lubrication Fundamentals
- Rolling Element Bearings and Lubrication
- Specialist Predictive Technologies for Machines
- Understanding Mechanical Failures of Rotating Equipment

## Environment

- Environmental Awareness
- Gas Dispersion Modelling for Hazard Assessment

## Water technology

- An Introduction to Effluent Water Treatment
- Boiler Care
- Control of Legionella in Water Systems
- Management of Industry Utility Water Systems
- The Cost of Water Systems
- Total Water Management for Industry

## Projects

- Project Management Foundation Course
- Project Management Game



# Training courses continued



## Validation

- 21 CFR Part 11 Compliance Management
- Computer System Validation
- Equipment and Facilities Validation
- DaCS Programmer Training
- GAMP 4
- GMP for Engineers
- Good Documentation Practice
- GxP Risk Assessment and Risk Management
- Introduction to 21 CFR Part 11
- Introduction to Business System Validation
- Introduction to Cleaning Validation
- Introduction to Computer System Validation
- Introduction to Equipment and Facilities Validation
- Introduction to GMP
- Introduction to Laboratory System Validation
- Introduction to Validation of Networked Systems
- Laboratory Information Management System Validation
- Organising and Writing SOP's for GMP
- Purified Water System Validation
- Spreadsheet Validation Training

## Specialist topics

- Advanced Design of Trip and Alarm Systems
- Asset Management for Responsible Engineers / Maintenance Leaders
- Criticality Analysis / FMEA
- Electrical Engineering in Chemical Plant
- Energy Management
- Equipment Cleaning (Mechanical / Chemical)
- Introduction to the Construction Design and Management Regulations (1994)
- Legislation Awareness
- Managing Effective Plant Shutdowns & Overhauls
- Modification Procedure
- Process Control for Process Engineers
- Process Evaluation & Preliminary Design
- Process Plant Commissioning
- Refrigeration Awareness
- Reliability Tools
- Root Cause Analysis
- Value from Valves
- Welding Appreciation

## Other courses

- Advanced Design of Trip and Alarm Systems (SIL Determination)
- Estimating
- Hazardous Area Classification / Electrical Equipment
- Introduction to Risk Quantification
- Managing Projects for Success
- Operation of Industrial Water Systems
- Planning and Control
- Practical Fire and Explosion Safety
- Project Value and Improving Practices

For further information regarding on site training please contact:

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