



ESS Training Catalogue

Leaders in Asset Management &
Maintenance Reliability through People





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ESS Training

Build competence and capability

We are a specialist provider of Asset Management, Maintenance, Reliability and Technical Training, supporting organisations through practical, industry-led learning.

Our programmes give companies and individuals the opportunity to upskill, develop their teams, maintain compliance, and improve efficiency, sustainability and performance.

Our training combines proven academic principles with real-world, hands-on experience from ESS subject matter experts. This approach ensures learning is practical, relevant and immediately applicable in the workplace, delivering real and lasting impact.



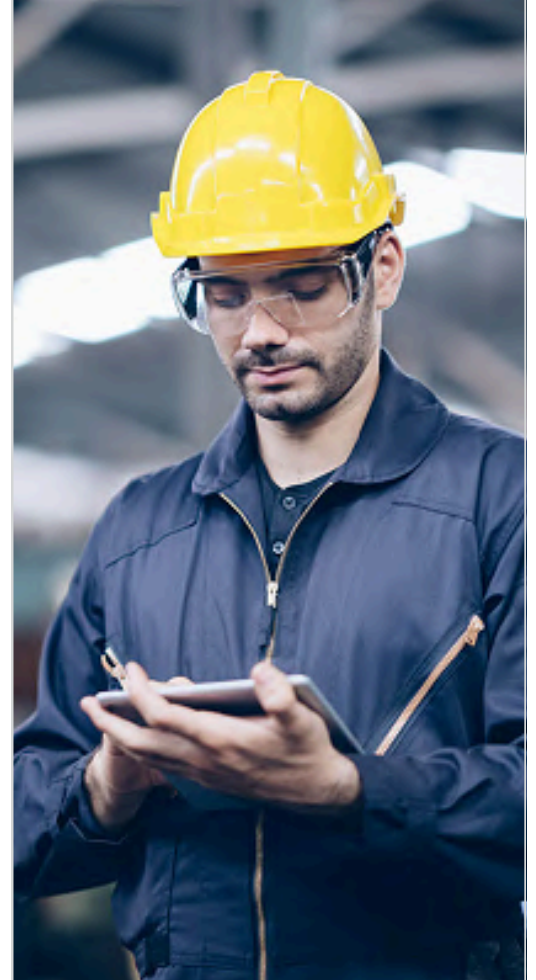
Public Courses



In-House Training



Accredited Courses



Our Accreditations and Associations



QAI AWARD



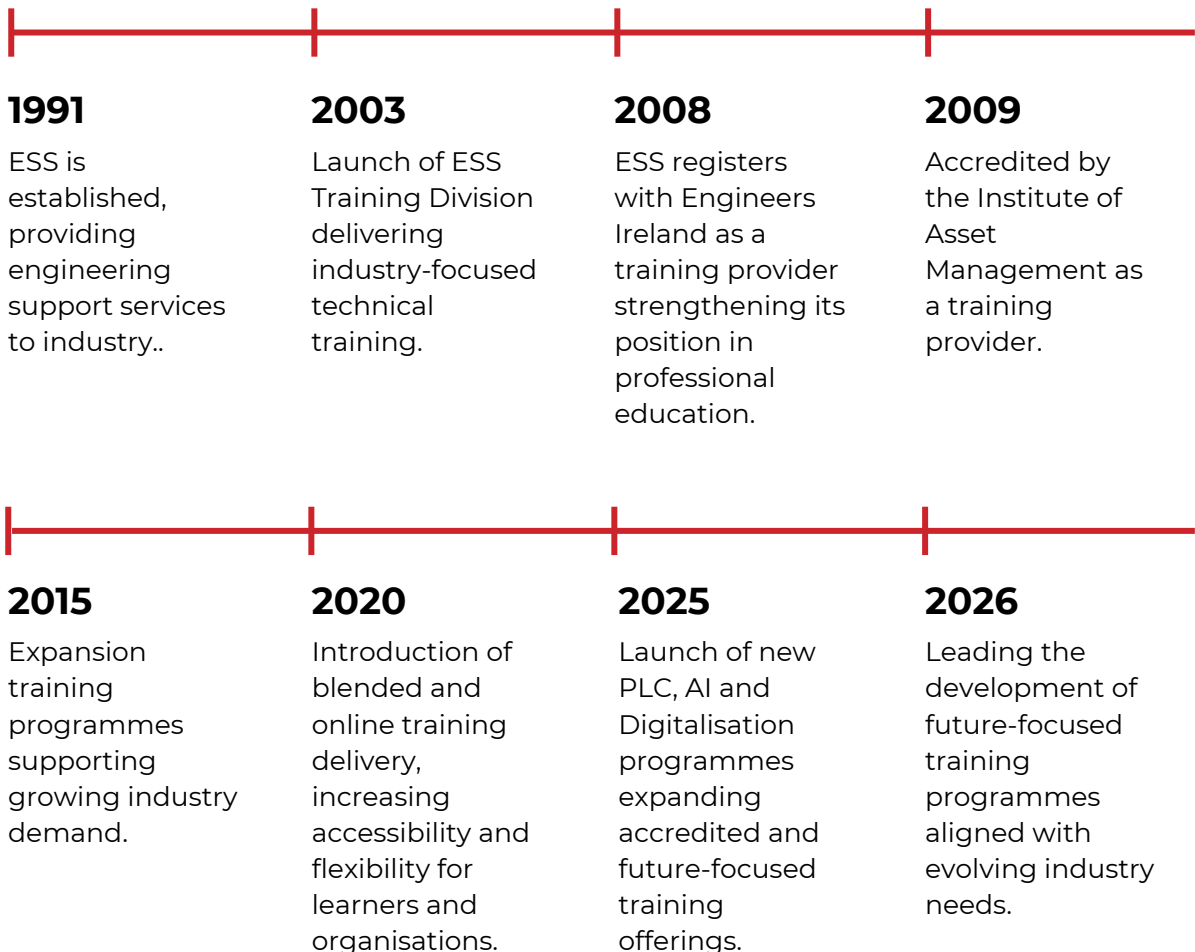
GRIFFITH COLLEGE





ESS Training Journey

ESS has developed its training offering over more than three decades, combining industry expertise, accredited programmes and practical experience to support organisations in achieving excellence in asset management, maintenance and technical operations.





Our Trainers

At ESS, our trainers combine strong academic knowledge with extensive hands-on industry experience. This ensures that all training is practical, relevant and directly applicable to real working environments.

Our trainers understand the challenges faced on site and bring real-world insight into every session, helping learners connect theory with practice.



Typical Trainer Profile

ESS trainers typically bring a blend of technical qualifications, industry experience and training expertise, including:

- Trade-qualified (e.g. Electrical, Mechanical, Instrumentation or Refrigeration disciplines)
- 10–20+ years' experience working in industrial environments
- Experience across sectors such as pharmaceutical, life sciences, manufacturing, utilities and food production
- Strong background in maintenance, troubleshooting, commissioning and continuous improvement
- Experience working with real plant, equipment and systems

Training Approach

- Practical, hands-on delivery with real-world examples
- Interactive sessions focused on problem-solving and application
- Small group sizes to maximise engagement and support
- Blended learning options combining classroom, online and on-site delivery

07

Asset Management

- **IAM Foundation in Asset Management**
- **IAM Certificate in Asset Management**
- **IAM Diploma in Asset Management**
- **Introduction to Asset Management Digitalisation**
- **Certificate in Asset Management Digitalisation**
- **Utilising Artificial Intelligence and Machine Learning for Asset Management**
- **Certificate in Utilising Artificial Intelligence and Machine Learning for Asset Management**





IAM Foundation in Asset Management

Overview

In this one-day introductory workshop you will learn about the important features of asset management and a variety of good practices which will benefit your business. The day will be a mixture of presentations, case studies and workshop sessions. Asset Management standards BSI PAS 55:2008 and ISO 55000:2014 will be introduced and discussed.

Course Content

- What is Asset Management, why is it important?
- The main features of asset management
- The development of the asset management specifications PAS55 & ISO 55000
- Assessment Methodology including practical exercises
- Case studies: How different industries carry out their asset management
- ISO55000 standard on Asset Management
- International Qualifications now available in Asset Management

Learning Objectives

- ✓ Basic asset management concepts, principles and terminology
- ✓ Characteristics of good practice asset management
- ✓ IAM resources to support the Individual and Organisational Journeys



Duration

1 day



Target Learner

An entry level course for people who want to understand Asset Management and what it can do for them, along with an introduction to the ISO standard ISO 55001.



Certification

Participants who successfully complete the Knowledge Test will be eligible for the IAM Foundation Award.



IAM Certificate in Asset Management

Overview

This course provides an intensive coverage of the principles and practice of Asset Management. The content is aligned to PAS 55, ISO 55000 and to the Institute of Asset Management (IAM) competency framework, with a view to preparing students to pass the IAM Certificate in Asset Management examination. It is suited to experienced practitioners with industrial or infrastructure asset management responsibilities, who can relate concepts to their work environment.

Modules

- The Principles of Asset Management
- Asset Management Policy, Strategy and Planning
- Managing Asset Life Cycle Decisions and Activities
- Assessing and Managing Asset Management Risks
- The Financial and Business Impact of Asset Management

Learning Objectives

- ✓ The participant will develop a business-centred appreciation of Asset Management and will be better able to influence decisions which have AM implications
- ✓ The course is deliberately cross-disciplinary and should help to foster effective team working and break down disciplinary silos
- ✓ The participant will be equipped to pass the IAM Certificate Examination



Duration

4 days



Target Learner

Participants from organisations where the reliability, performance and attendant risks of fixed assets have a significant impact on business performance will benefit most from this course.



Certification

Students will be equipped to pass the Institute of Asset Management Certificate.



IAM Diploma in Asset Management

Overview

This deep-dive course provides intensive coverage of the principles and practices of Asset Management for those seeking the IAM Diploma qualification in Asset Management. The curriculum covers all the required modules of the Diploma and is also aligned with asset management standards (PAS 55, ISO 55000) and the GFMAM Asset Management 'Landscape'.

Modules

- Principles of Asset Management
- Asset Management Policy, Strategy & Planning
- Managing Asset Life Cycle Decisions and Activities
- Assessing and Managing Asset Management Risks
- Financial and Business Impact
- Practices of Asset Management
- Asset Management Information and Knowledge
- Sustainable Asset Care and Performance Management
- Managing Change in Asset Management Systems and Capabilities
- Contractor and Supplier Management
- Demand Forecasting and Capital Expenditure Planning
- Methods for Realising Whole Live Value from Assets

Learning Objectives

- ✓ Contribute to the development and implementation of AM policy, strategy, objectives and plans
- ✓ Participate in asset-related risk identification, analysis and management processes and contingency planning
- ✓ Understand the asset life cycle, value realisation and the role of appropriate tools to optimise the performance, risk and cost of assets



Duration

5 days



Target Learner

Experienced professionals from many functions within asset-intensive organisations, where the performance of physical assets has a significant impact on organisational performance.



Certification

Students will be equipped to pass the Institute of Asset Management Diploma.



Introduction to Asset Management Digitisation

Overview

This course introduces the principles of Asset Management and how digital tools can support the effective management of assets across their lifecycle. Delivered through a mix of theory and practical exercises, the programme explores how technologies such as EAM/CMMS systems, asset condition monitoring and data analytics can be used to monitor asset performance, support maintenance decisions and improve whole-life asset value.

Course Content

- Introduction to Asset Management
- Asset Management Principles and Frameworks
- Asset Management Policy and Strategy
- Lifecycle Asset Management
- Asset Hierarchies, Work Order Workflows and Scheduling Parameters
- Fault Analysis and Tracking
- Risk Management in Asset Management
- Implementing an Asset Management System
- Digital Tools for Asset Monitoring and Performance Management

Learning Objectives

- ✓ Develop an understanding of the principles and structure of Asset Management and how they apply in practice
- ✓ Understand how digital systems and EAM/CMMS platforms can support asset monitoring, analysis and decision making
- ✓ Apply asset management principles and data insights to support improved asset performance, maintenance planning and lifecycle decision making



Duration

16 hours



Target Learner

Engineers, maintenance and operations staff seeking an introduction to digital asset management practices.



Certification

Participants will receive a Certificate of Completion from ESS.



Certificate in Asset Management Digitisation

Overview

This QQI-accredited programme builds on the principles of Asset Management and focuses on the practical use of digital tools to manage industrial assets. Participants learn how to configure and use CMMS/EAM systems, including asset hierarchies, work order planning, preventive maintenance scheduling and data management.

Course Content

- Introduction to Asset Management
- Asset Management Principles and Frameworks
- Asset Management Policy and Strategy
- Asset Hierarchies, Work Order Workflows and Scheduling Parameters
- Lifecycle Asset Management
- Risk Management in Asset Management
- Implementing an Asset Management System
- Tools, Implementation and Practical Application

Learning Objectives

- ✓ Understand the core principles of asset management and how digital systems support asset performance and decision making
- ✓ Configure and utilise CMMS/EAM systems including asset hierarchies, work order workflows and maintenance scheduling
- ✓ Apply lifecycle thinking and digital tools to analyse asset performance and support improved maintenance and investment decisions



Duration

4-6 Weeks



Target Learner

Technicians, engineers, supervisors and maintenance professionals seeking to develop practical skills in digital asset management systems and asset lifecycle decision making.



Certification

Participants will be awarded a QQI NFQ Level 6 Certificate



Utilising Artificial Intelligence and Machine Learning for Asset Management

Overview

This course explores how Artificial Intelligence (AI) and Machine Learning (ML) can enhance Asset Management practices. Participants learn how predictive analytics, real-time data and digital tools can support asset monitoring, predictive maintenance and lifecycle decision making. The programme also examines how AI and ML can be integrated with EAM/CMMS systems to improve asset performance and optimise whole-life value.

Course Content

- Asset Management and the Role of AI and Machine Learning
- Asset Management Principles and Frameworks with AI Integration
- Lifecycle Asset Management with ML-Driven Optimisation
- Predictive Maintenance using Machine Learning
- Fault Pattern Recognition and Anomaly Detection
- Implementing Asset Management Systems with AI/ML

Learning Objectives

- ✓ Understand how AI and Machine Learning can support asset monitoring, predictive maintenance and lifecycle decision making
- ✓ Learn how to integrate legacy asset and maintenance data into AI-enabled EAM/CMMS systems
- ✓ Apply AI and ML tools to analyse asset performance, detect faults and support improved asset management strategies



Duration

16 hours



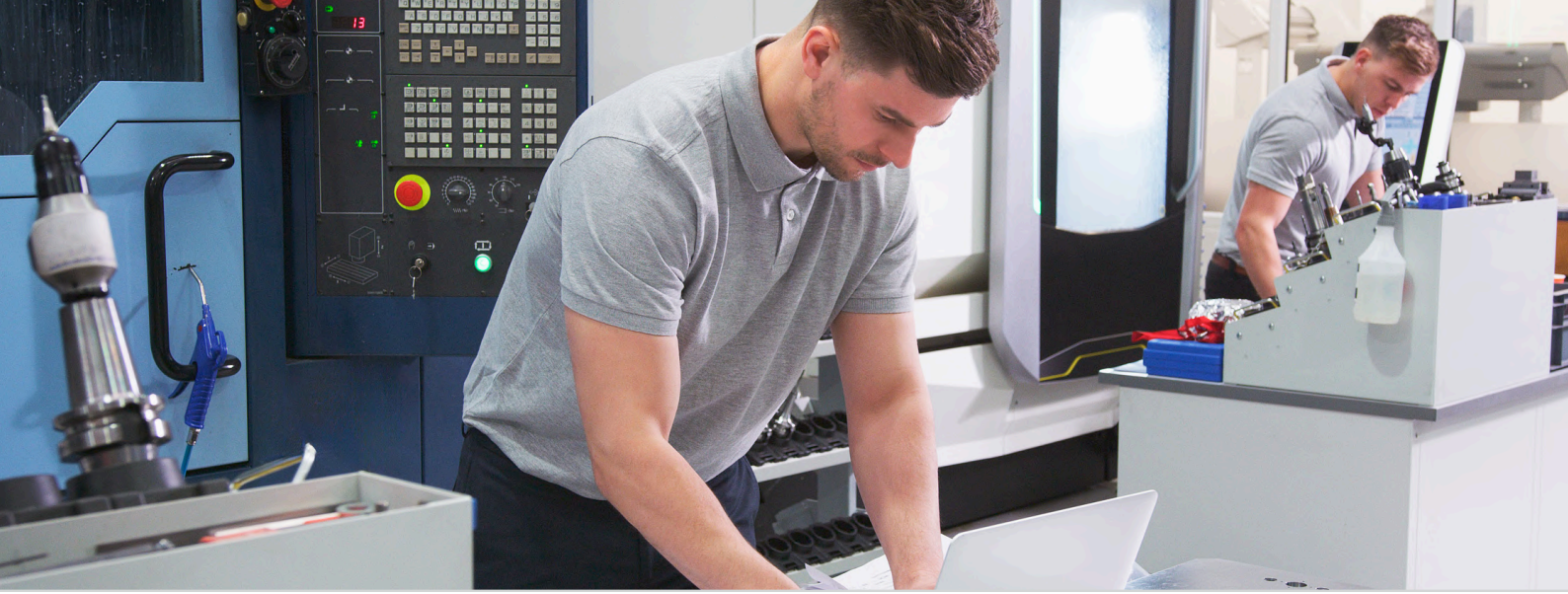
Target Learner

Engineers, maintenance professionals and asset management practitioners seeking to understand how AI and machine learning can support modern asset management practices.



Certification

Participants will receive a Certificate of Completion from ESS.



Certificate in Utilising Artificial Intelligence and Machine Learning for Asset Management

Overview

This programme develops learners' understanding of how Artificial Intelligence (AI) and Machine Learning (ML) can support modern asset management practices. Participants explore how AI/ML tools can be applied across the asset lifecycle to support predictive maintenance, improve asset performance and enhance maintenance strategies within industrial environments.

Course Content

- Asset Management and the Role of AI and Machine Learning
- Asset Management Principles and Frameworks with AI Integration
- Asset Management Policy, Strategy and AI Governance
- Lifecycle Asset Management with ML-Driven Optimisation
- Predictive Maintenance using Machine Learning
- Implementing Asset Management Systems with Integrated AI/ML

Learning Objectives

- ✓ Understand how AI and Machine Learning support asset monitoring, predictive maintenance and lifecycle optimisation
- ✓ Apply AI/ML tools and workflows to analyse asset performance and improve maintenance strategies
- ✓ Develop an AI-enhanced asset management approach while recognising key governance and ethical considerations



Duration

4-6 Weeks



Target Learner

Technicians, engineers, supervisors and maintenance professionals seeking to develop practical skills in applying AI and machine learning within asset management systems.



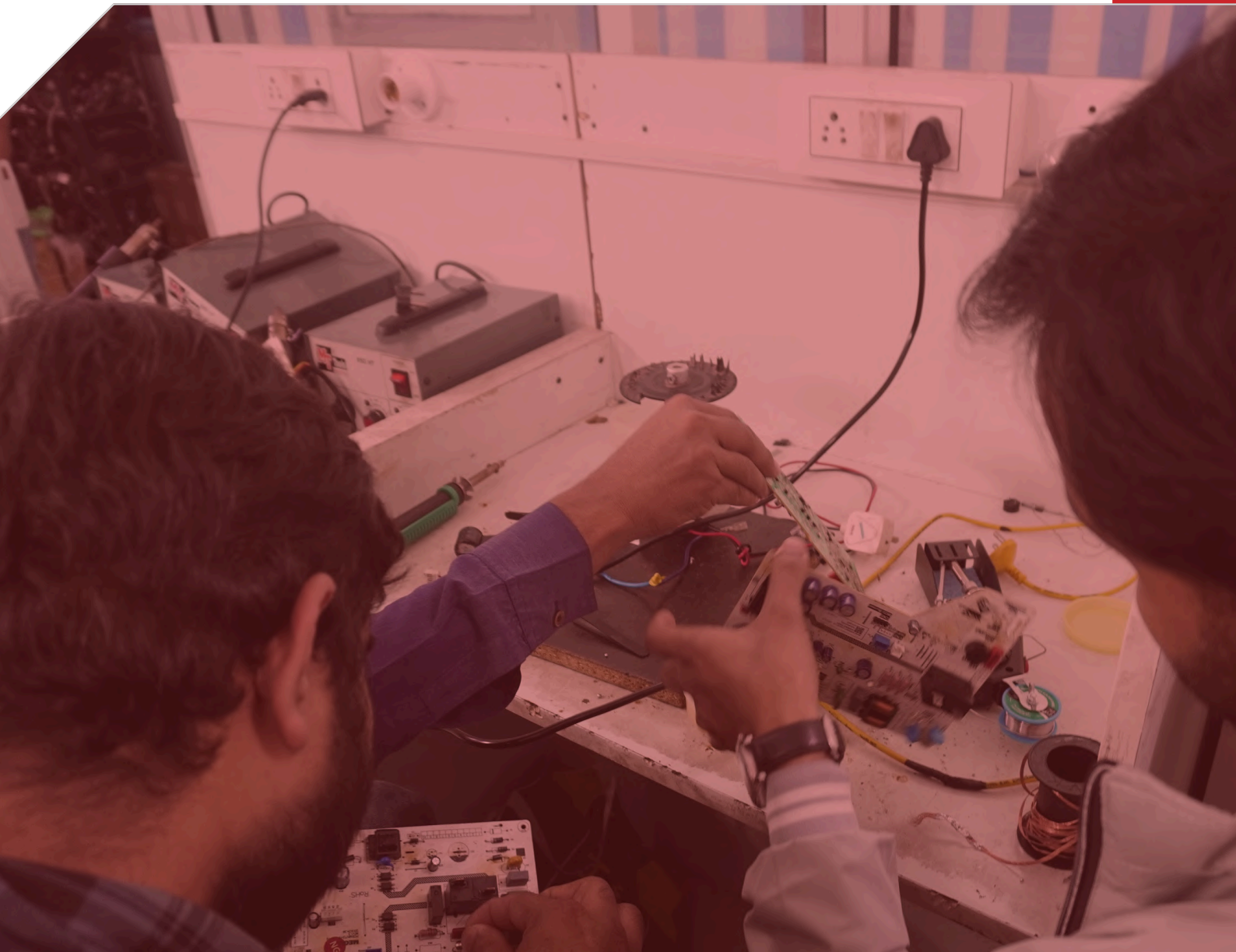
Certification

Participants will be awarded a QQI NFQ Level 6 Certificate

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Electrical & Instrumentation

- **Certificate in Industrial Instrumentation Calibration**
- **Electrical Fault-Finding & Troubleshooting**
- **Electrical Safety & Awareness**
- **Certificate in Industrial Electrical Safety and Systems**





Certificate in Industrial Instrumentation Calibration

Overview

The Certificate in Industrial Instrumentation Calibration (CIIC) is designed to develop learners' understanding of the principles of instrument calibration, calibration terminology, and relevant procedures, and to develop the skills to perform calibration techniques, and measure, record and evaluate data. The programme will equip those working in industry (manufacturing, MedTech, pharmaceutical) and services with the theoretical knowledge and practical skills to check and verify process control instruments.

Modules

- Safe work practices in process environments
- Principles of calibration
- Pressure measurement
- Level measurement
- Flow measurement
- Temperature Measurement
- Good practices in calibration system documentation and record

Learning Objectives

- ✓ Explain the principles of operation of industrial measurement instruments
- ✓ Describe the principles of calibration and the associated standard instruments and data sheets/job plans
- ✓ Perform appropriate calibration techniques on measurement instruments using standard safety and operational procedures



Duration

4 days & 5 evenings



Target Learner

Individuals employed in manufacturing and service industries who are required, as part of their job or in a new role, to have the knowledge, skills, and competence to check and verify process control instruments.



Certification

Participants will be awarded a QQI NFQ Level 6 Certificate



Electrical Faultfinding & Troubleshooting

Overview

This practical course provides participants with essential electrical fault-finding and troubleshooting techniques used in industrial environments. Focusing on a structured and analytical approach, the programme covers commonly used electrical control systems and safe troubleshooting practices. Through hands-on exercises and real-world scenarios, participants develop the skills required to identify faults quickly and minimise unplanned downtime.

Course Content

- Principles of Electrical Fault-Finding and Troubleshooting
- Use of Electrical Drawings and Schematics
- Electrical Testing Tools and Techniques
- Systematic Fault-Finding Methods and Approaches
- Troubleshooting Safety Practices
- Practical Fault-Finding on Industrial Control Circuits

Learning Objectives

- ✓ Apply a logical and structured approach to fault-finding in electrical control systems
- ✓ Use electrical drawings, testing tools and fault-finding aids to locate and diagnose faults
- ✓ Understand the importance of documentation and maintenance history in supporting effective troubleshooting



Duration

2 days



Target Learner

Technicians, craftspeople and engineers with a basic understanding of electrical systems seeking to develop practical fault-finding skills.



Certification

Participants will receive a Certification of Completion.



Electrical Safety & Awareness

Overview

This course provides non-electrical personnel with an awareness of electrical systems and the associated risks in industrial environments. It focuses on safe interaction with electrical equipment, helping participants recognise hazards, understand basic electrical components and follow correct safety procedures when working around electrical control systems.

Course Content

- Electrical Safety Principles and Hazards
- Causes of Injury and Electrocution
- Common Electrical Components and Their Use
- Electrical Schematics and Basic Interpretation
- Lockout/Tagout Procedures and Safe Work Practices
- Electrical Emergencies and Hazard Awareness

Learning Objectives

- ✓ Identify common electrical hazards and understand the risks associated with electrical systems
- ✓ Apply safe working practices when interacting with electrical equipment and control systems
- ✓ Understand basic electrical components, schematics and safety procedures in the workplace



Duration

1 day



Target Learner

Non-electrical personnel working in industrial environments, including operators, mechanical staff and supervisors.



Certification

Participants will receive a Certificate of Completion from ESS



Certificate in Industrial Electrical Safety and Systems

Overview

This QQI-accredited programme provides learners with the knowledge and practical skills required to work safely with industrial electrical systems. The course covers electrical principles, control systems and safety practices, enabling participants to understand, test and maintain electrical equipment in industrial environments. Delivered on a part-time basis, the programme combines theoretical learning with practical application to support safe and effective electrical system operation.

Modules

- Electrical Safety Standards and Safe Work Practices
- Fundamentals of AC and DC Electrical Circuits
- Power, Energy and Electrical Supply Systems
- Transformers and Motor Operation
- Control Circuits and Electrical Schematics
- Testing, Fault-Finding and System Validation

Learning Objectives

- ✓ Develop a broad understanding of electrical engineering principles and their practical application in industrial systems
- ✓ Apply electrical safety practices and understand maintenance requirements within manufacturing environments
- ✓ Use electrical knowledge to support safe, efficient and reliable operation of industrial systems



Duration

5 days



Target Learner

Technicians, operators and non-electrical personnel seeking to develop practical skills and knowledge in industrial electrical systems and safety.



Certification

Graduates are awarded a QQI NFQ Level 6 Certificate

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HVAC & Refrigeration

- **Commercial & Industrial HVAC Systems And Principles**
- **HVAC Training**
- **Refrigeration Principles & Systems**





Commercial & Industrial HVAC Systems And Principles

Overview

This 3-day course provides maintenance technicians and trades personnel with the knowledge required to work with a range of commercial and industrial HVAC systems. It covers the fundamentals of air conditioning and refrigeration, along with practical skills in fault diagnosis, maintenance and system operation. Participants will also gain the confidence to interact with contractors and support system commissioning activities.

Course Content

- Fundamentals of Refrigeration and Vapour Compression Systems
- Air Conditioning and Heat Pump Systems
- HVAC Components, Controls and Sensors
- Refrigerants and Environmental Considerations
- System Performance, Superheat and Subcooling
- Maintenance, Fault-Finding and Service Procedures

Learning Objectives

- ✓ Understand the principles of HVAC systems, including refrigeration cycles and system components
- ✓ Apply knowledge to support maintenance, fault diagnosis and safe operation of HVAC equipment
- ✓ Interpret system data and performance indicators to support efficient system operation and decision making



Duration

2 days



Target Learner

Maintenance technicians and trades personnel with relevant experience seeking to develop HVAC knowledge and practical skills.



Certification

Participants will receive a Certificate of Completion from ESS.



HVAC Training (Air Handling Units, Chillers and Heat Pumps)

Overview

This course provides participants with the knowledge and practical skills required to understand and maintain key HVAC systems, including air handling units, chillers and heat pumps. It covers system operation, air properties and maintenance practices, with a focus on safe working and efficient system performance in industrial environments.

Course Content

- Fundamentals of Refrigeration and Vapour Compression Systems
- Chillers and Heat Pump Operation
- Psychrometrics and Air Properties
- Air Handling Units and Filtration Systems
- HVAC System Performance and Airflow Management
- Maintenance Procedures and SOP Development

Learning Objectives

- ✓ Understand the operation of HVAC systems including AHUs, chillers and heat pumps
- ✓ Apply knowledge of air properties and system performance to support efficient operation
- ✓ Carry out basic maintenance tasks and develop safe operating procedures for HVAC systems



Duration

2 days



Target Learner

Maintenance technicians and personnel seeking to develop practical skills in HVAC systems and air handling processes.



Certification

Participants will receive a Certificate of Completion from ESS.



Refrigeration Principles & Systems

Overview

This 3-day course provides maintenance technicians and trades personnel with the knowledge and practical skills required to work with industrial refrigeration systems. It covers core refrigeration principles, system components and safe working practices, along with practical training in fault diagnosis, maintenance and system operation.

Course Content

- Fundamentals of Refrigeration and Vapour Compression Systems
- Chillers and Heat Pump Operation
- Psychrometrics and Air Properties
- Air Handling Units and Filtration Systems
- HVAC System Performance and Airflow Management
- Maintenance Procedures and SOP Development

Learning Objectives

- ✓ Understand the principles and operation of refrigeration systems and components
- ✓ Interpret system layouts and identify key refrigeration plant equipment
- ✓ Apply knowledge to support fault diagnosis, maintenance and efficient system operation



Duration

3 days



Target Learner

Maintenance technicians and trades personnel seeking to develop practical skills in refrigeration systems and maintenance.



Certification

Participants will receive a Certificate of Completion from ESS.

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Industrial Skills

- **Introduction to Boiler Operations, Safety and Legislation**
- **Boiler Operative Accreditation Scheme (BOAS)**
- **Certificate in Industrial Manufacturing and Maintenance Skills**





Introduction to Boiler Operations, Safety and Legislation

Overview

This course provides an introduction to boiler operation, safety and associated legislation within industrial environments. It covers the fundamentals of steam systems, boiler components and safe working practices, combining classroom learning with practical demonstrations. The programme is ideal as a foundation course and prepares participants for further training such as the BOAS qualification

Course Content

- Fundamentals of Steam and Boiler Operation
- Boiler Types, Components and Systems
- Safe Operation of Boilers and Associated Equipment
- Boiler Room Layout and Process Systems
- Feedwater Treatment and Combustion Basics
- Boiler Legislation and Best Practice

Learning Objectives

- ✓ Understand the principles of steam generation and boiler operation
- ✓ Apply safe working practices and recognise hazards in boiler environments
- ✓ Develop a basic understanding of boiler systems, legislation and maintenance requirements



Duration

1 day



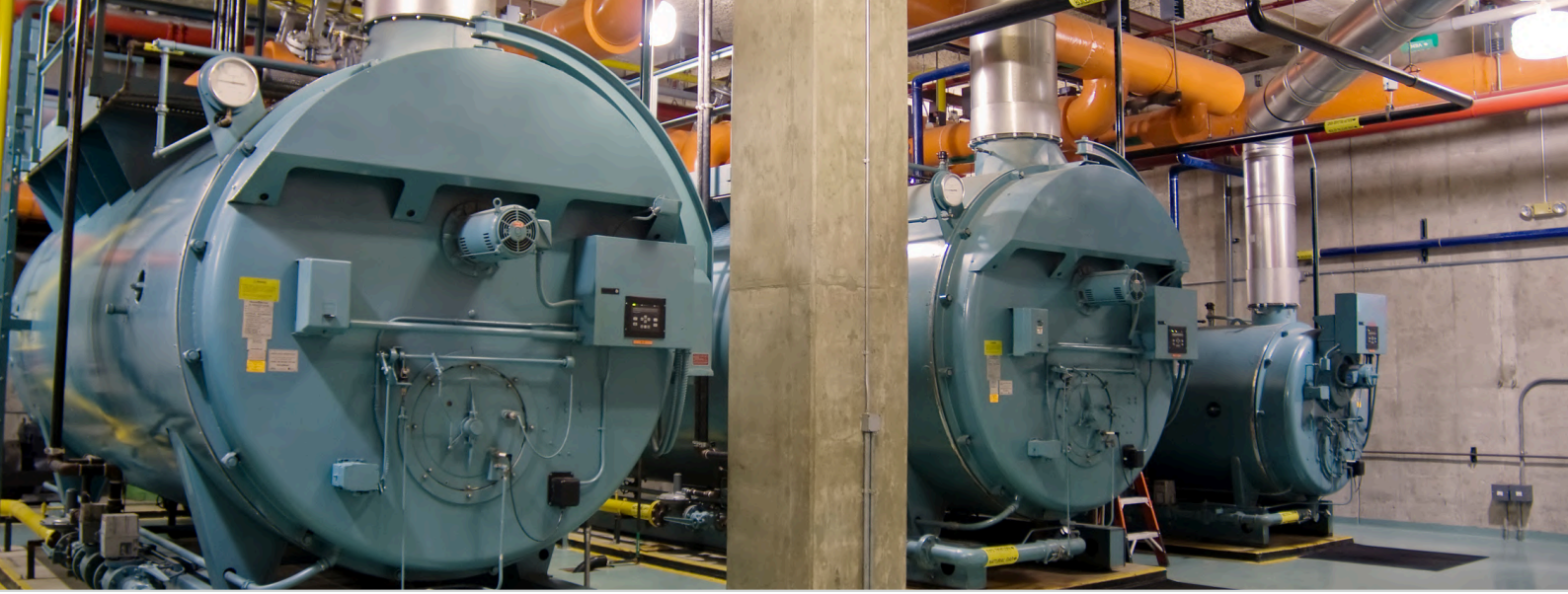
Target Learner

Personnel involved in or working around boiler systems, including operators, maintenance staff and supervisors seeking a basic understanding of boiler operation and safety.



Certification

Participants will receive a Certificate of Completion from ESS.



Boiler Operative Accreditation Scheme (BOAS)

Overview

The Boiler Operative Accreditation Scheme (BOAS) is an internationally recognised qualification for boiler operators and managers. The programme provides the knowledge required for the safe and efficient operation of boiler plant, covering key operational, safety and regulatory requirements. It also prepares participants for formal BOAS assessment and certification.

Course Content

- Fundamental Boiler Terms and Concepts
- Heat Transfer and Combustion Principles
- Boiler Operation and Auxiliary Systems
- Control, Instrumentation and Feedwater Systems
- Safety, Legal and Environmental Requirements
- Energy Efficiency and Boiler House Management

Learning Objectives

- ✓ Understand the principles of boiler operation and associated systems
- ✓ Apply safe, efficient and compliant practices in boiler house environments
- ✓ Prepare for BOAS assessment and certification requirements



Duration

5 days



Target Learner

Boiler operators and boiler house managers responsible for the operation and supervision of boiler systems.



Certification

Successful participants will achieve BOAS Accreditation, valid for 5 years.



Certificate in Industrial Manufacturing and Maintenance Skills

Overview

This programme equips operators and technicians with the knowledge, skills, and competence to perform a broad range of technical, maintenance, and service tasks in industrial manufacturing environments. It develops cross-functional skills in Electrical, HVAC, Refrigeration/F-Gas, Good Manufacturing Practices (GMP), facilities management, and workplace communication. Graduates are prepared to work confidently across departments, ensuring safe, efficient, and compliant operations.

Modules

- Industrial Electrical Safety And Systems
- Fundamentals Of GMP And Quality Regulations
- HVACR Principles
- Workplace Communication

Learning Objectives

- ✓ Operate and maintain industrial equipment safely and efficiently
- ✓ Apply cross-functional technical knowledge across electrical, HVAC, and refrigeration systems
- ✓ Communicate professionally while upholding quality, compliance, and GMP requirements



Duration

9 months (part-time)



Target Learner

Industrial operators, technicians, and maintenance personnel seeking to expand technical skills, enhance career prospects, or gain a recognised Level 6 qualification.

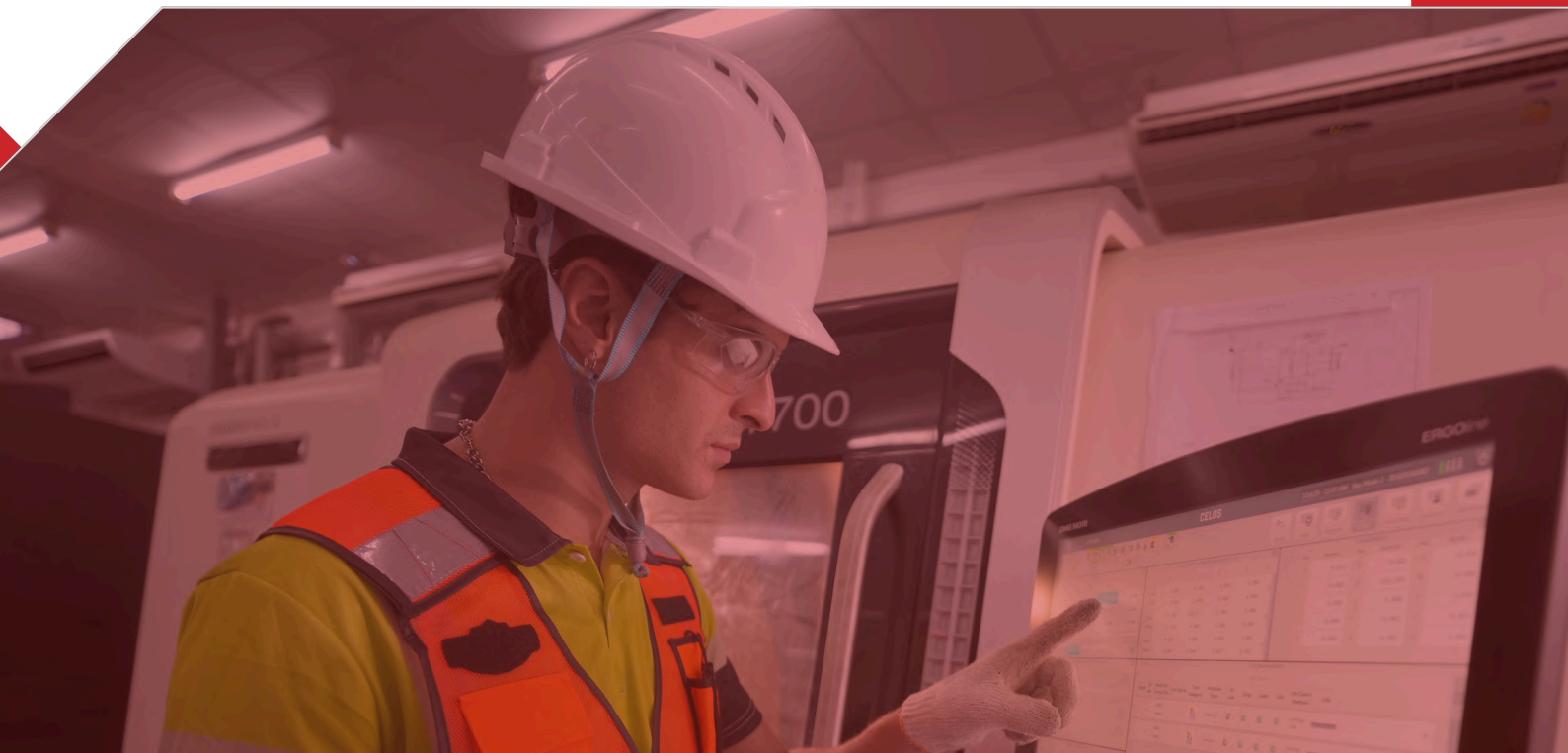


Certification

Graduates are awarded a QQI NFQ Level 6 Certificate

Maintenance & Reliability

- **Best Practices In Inventory & Spare Parts Management**
- **Best Practices in Maintenance & Reliability Excellence**
- **FMECA (Failure Modes Effects And Criticality Analysis)**
- **Introduction To Technical Writing**
- **Leadership And Management Skills, Your Technical Team**
- **Lean Best Practices In Maintenance Management For Team Leaders & Supervisors**
- **Lean Maintenance (Total Productive Maintenance) 1 Day Workshop**
- **Lean Six Sigma - Yellow Belt**
- **Lean Six Sigma - Green Belt**
- **Lean Tools & Techniques**
- **Maintenance Planning & Scheduling**
- **Maintenance Strategy**
- **Masterclass In Reliability Management**
- **Practical Leadership Skills For The Maintenance Team Leader**
- **Reliability Centered Maintenance For The Pharmaceutical Industry**
- **Reliability Improvement Certificate**
- **Root Cause Analysis**
- **Total Productive Maintenance (TPM) 2 Day Workshop**
- **Writing Practical Maintenance Routines**





Best Practices In Inventory & Spare Parts Management

Overview

This course provides practical guidance on managing maintenance spare parts and inventory at optimal levels to support efficient operations and reduce downtime. It focuses on the full inventory lifecycle, from stock creation and control through to optimisation and disposal, helping organisations improve performance and cost control.

Course Content

- Inventory Fundamentals and Business Case for Stock Holding
- Inventory Costs, Models and Systems
- Inventory Lifecycle and Stock Control Processes
- Inventory Reduction Techniques and Criticality Analysis
- KPIs and Performance Measurement
- Inventory Interfaces, Vendor Managed Inventory and Best Practices

Learning Objectives

- ✓ Understand inventory principles, costs and models used in maintenance environments
- ✓ Apply techniques to optimise stock levels and reduce excess inventory
- ✓ Improve inventory processes to support maintenance performance and business efficiency



Duration

1 day



Target Learner

Maintenance managers, supervisors, stores personnel and procurement staff responsible for managing spare parts and inventory.



Certification

Participants will receive a Certificate of Completion from ESS



Best Practices in Maintenance & Reliability Excellence

Overview

This course provides participants with a comprehensive understanding of best practices in maintenance, reliability and asset management. It equips learners with the knowledge and tools required to improve maintenance performance, reliability and overall operational efficiency. Participants will gain insight into how maintenance functions support wider business objectives and how to implement sustainable improvements.

Course Content

- Asset Management and Reliability Principles
- Failure Analysis and Reliability Improvement
- Maintenance Strategies: Preventive, Predictive and Proactive
- Work Planning, Scheduling and CMMS Systems
- Maintenance Management, KPIs and Performance Measurement
- Continuous Improvement, Lean Maintenance and TPM

Learning Objectives

- ✓ Understand maintenance and reliability principles and their role in asset performance
- ✓ Apply maintenance strategies and tools to improve reliability and efficiency
- ✓ Use planning, KPIs and continuous improvement techniques to support maintenance excellence



Duration

7 days



Target Learner

Maintenance managers, engineers, supervisors and reliability professionals seeking to improve maintenance performance and operational efficiency.



Certification

Participants will receive a Certificate of Completion from ESS



FMECA (Failure Modes, Effects and Criticality Analysis)

Overview

This course introduces the principles and application of Failure Modes, Effects and Criticality Analysis (FMECA) as a structured approach to improving equipment reliability. Participants will learn how to identify failure modes, assess their impact and select appropriate maintenance strategies to ensure cost-effective and efficient asset management.

Course Content

- Introduction to FMECA and Maintenance Strategies
- Understanding Failure Modes and Causes of Failure
- Equipment Functions and Criticality Analysis
- Selecting Maintenance Tasks and Strategies
- Applying FMECA in Practice
- Root Cause Analysis and Lessons Learned

Learning Objectives

- ✓ Understand why equipment fails and how failure modes impact performance
- ✓ Select appropriate and cost-effective maintenance strategies using FMECA
- ✓ Apply FMECA techniques to improve reliability and maintenance decision making



Duration

1 day



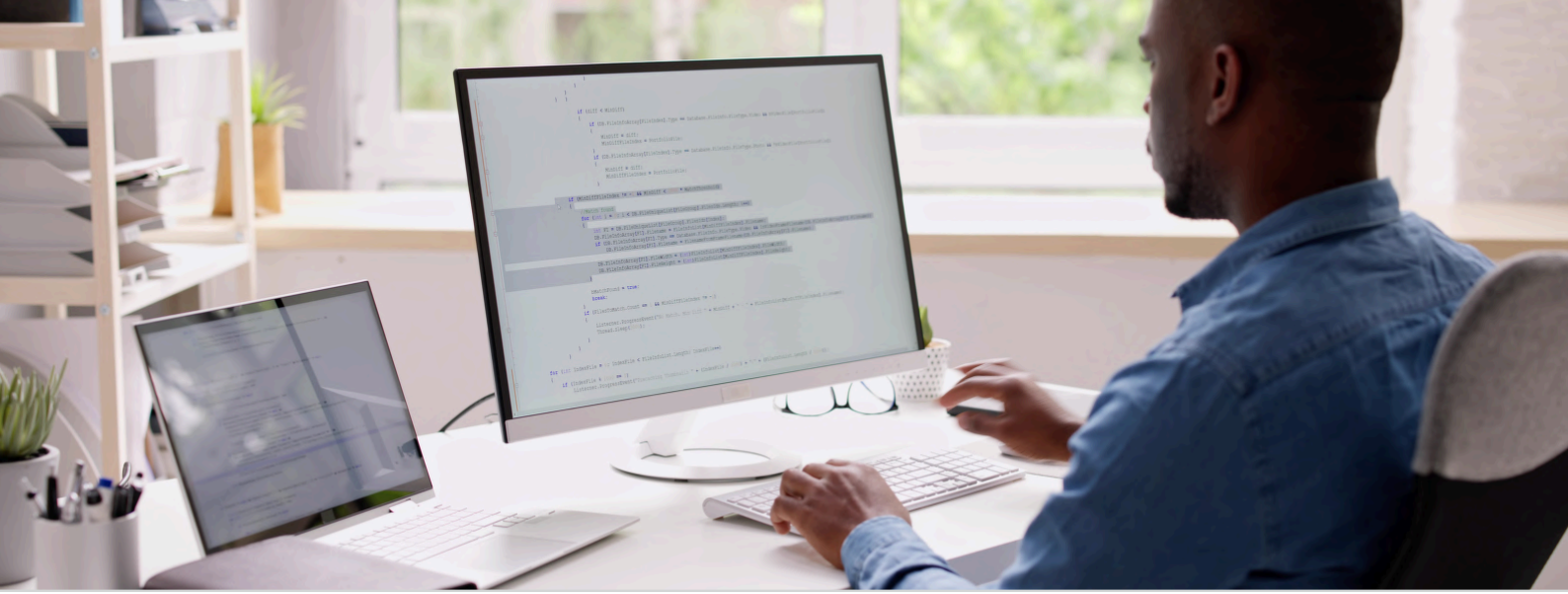
Target Learner

Technicians, operators, planners, supervisors and managers involved in maintenance, reliability and asset management.



Certification

Participants will receive a Certificate of Completion from ESS



Introduction to Technical Writing

Overview

This course develops the skills required to produce clear, concise and effective technical documentation. It focuses on improving how information is structured and communicated so that readers can quickly understand key messages. Through practical exercises, participants learn how to create accurate and user-friendly reports, procedures and technical documents.

Course Content

- Principles of Effective Technical Communication
- Understanding the Reader and Structuring Content
- Writing Clearly, Concisely and Accurately
- Avoiding Ambiguity and Improving Clarity
- Planning, Drafting and Editing Technical Documents
- Writing Reports, SOPs and Technical Documentation

Learning Objectives

- ✓ Apply techniques to produce clear, concise and accurate technical documentation
- ✓ Structure reports and documents to improve readability and understanding
- ✓ Communicate technical information effectively for different audiences



Duration

1 day



Target Learner

Engineers, technicians and professionals responsible for creating reports, procedures or technical documentation.



Certification

Participants will receive a Certificate of Completion from ESS



Leadership And Management Skills, Your Technical Team

Overview

This course develops the skills required to effectively lead and manage technical teams within industrial environments. It focuses on people management, leadership styles and communication, helping participants build high-performing teams and support organisational goals. The programme equips maintenance leaders with practical tools to manage performance, motivate teams and drive continuous improvement.

Course Content

- Role of the Maintenance Team Leader
- Leadership Styles and People Management
- Effective Communication and Coaching
- Performance Management and Goal Setting
- Managing Change and Resolving Conflict
- Building and Developing High-Performing Teams

Learning Objectives

- ✓ Understand leadership principles and apply effective people management techniques
- ✓ Develop communication, coaching and performance management skills
- ✓ Build and lead motivated teams to improve efficiency and organisational performance



Duration

1 day



Target Learner

Maintenance team leaders, supervisors and technical professionals responsible for managing people and leading teams.



Certification

Participants will receive a Certificate of Completion from ESS



Lean Best Practices In Maintenance Management For Team Leaders & Supervisors

Overview

This practical 2-day course provides participants with the key principles of effective maintenance management within a Lean framework. It focuses on reducing downtime, improving reliability and optimising maintenance performance through structured approaches and practical exercises. Participants will gain the knowledge required to implement best practices and support continuous improvement in maintenance operations.

Course Content

- Maintenance Tactics: Preventive, Predictive and Condition-Based Maintenance
- Maintenance Planning and Scheduling
- Equipment Criticality and Reliability Centred Maintenance
- Lean Maintenance Principles and Performance Measurement
- Key Performance Indicators and OEE
- Continuous Improvement, RCA and Spares Management

Learning Objectives

- ✓ Understand maintenance strategies and when to apply them effectively
- ✓ Apply planning, scheduling and reliability techniques to improve performance
- ✓ Use KPIs and continuous improvement methods to optimise maintenance operations



Duration

2 days



Target Learner

Maintenance team leaders, supervisors, engineers and technicians responsible for maintenance performance and reliability.



Certification

Participants will receive a Certificate of Completion from ESS.



Lean Maintenance (Total Productive Maintenance)

Overview

This introductory workshop provides an overview of Total Productive Maintenance (TPM) as a foundation for Lean transformation. It focuses on improving equipment reliability, reducing downtime and creating a stable manufacturing environment. Participants will gain practical insight into TPM principles and how they support continuous improvement and operational performance.

Course Content

- Introduction to TPM and Lean Maintenance Principles
- TPM Pillars and Key Performance Metrics (OEE, Losses)
- Asset Care and Condition Monitoring
- Root Cause Analysis and Problem Prevention
- 5S and Workplace Organisation in TPM
- TPM Implementation and Continuous Improvement

Learning Objectives

- ✓ Understand the principles of TPM and its role in improving reliability and performance
- ✓ Apply TPM tools to reduce downtime and improve equipment effectiveness
- ✓ Support implementation of TPM practices and continuous improvement initiatives



Duration

1 day



Target Learner

Frontline employees, maintenance and production supervisors, and managers interested in implementing TPM within their organisation



Certification

Participants will receive a Certificate of Completion from ESS.



Lean Six Sigma - Yellow Belt

Overview

This course provides an introduction to Lean Six Sigma principles, focusing on improving quality, efficiency and process performance. Participants will learn how to identify waste, apply structured problem-solving techniques and support continuous improvement initiatives. The programme includes practical project work, enabling learners to apply tools and techniques to real business scenarios.

Course Content

- Introduction to Lean Management and Six Sigma
- Waste Identification and Process Improvement Concepts
- Process Mapping and Visual Management
- Problem Solving and Root Cause Analysis (A3, 5 Whys)
- Continuous Improvement Tools and Techniques
- Project Development and Implementation

Learning Objectives

- ✓ Understand Lean Six Sigma principles and their role in process improvement
- ✓ Apply basic tools to identify waste and support operational efficiency
- ✓ Contribute to improvement projects using structured problem-solving methods



Duration

2 days



Target Learner

Operators, technicians and professionals involved in process improvement or supporting continuous improvement initiatives.



Certification

Participants who successfully complete the programme will be awarded an IASSC Lean Six Sigma Yellow Belt Certification.



Lean Six Sigma - Green Belt

Overview

This course provides participants with a practical understanding of Lean Six Sigma principles and how to apply them to improve quality, efficiency and performance. It focuses on identifying waste, improving processes and delivering measurable business improvements. Participants will work on real-world projects throughout the programme, applying tools and techniques to achieve tangible results.

Course Content

- Lean and Six Sigma Principles and Improvement Methods
- Process Mapping and Waste Identification
- Problem Solving and Root Cause Analysis
- Continuous Improvement Tools and Techniques
- Change Management and Team Engagement
- Project Development and Implementation

Learning Objectives

- ✓ Understand Lean Six Sigma principles and their application in improving processes
- ✓ Apply tools and techniques to identify waste and improve performance
- ✓ Deliver structured improvement projects with measurable business impact



Duration

5 days



Target Learner

Engineers, managers and professionals involved in process improvement, operational performance and continuous improvement initiatives.



Certification

Participants who successfully complete the programme will be awarded a Lean Six Sigma Green Belt Certification.



Lean Tools & Techniques

Overview

This course provides a practical understanding of Lean tools and techniques used to improve efficiency, reduce waste and enhance process performance. It explores how Lean can be successfully implemented within organisations, focusing on both technical methods and the people aspects required to sustain improvements. Participants will gain the knowledge and confidence to apply Lean in real-world environments.

Course Content

- Introduction to Lean Principles and Implementation
- Waste Identification and Process Improvement Techniques
- 5S, Standard Work and Visual Management
- Value Stream Mapping and Flow Improvement
- Problem Solving Tools (5 Whys, Fishbone, Pareto)
- Continuous Improvement, Team Engagement and Sustaining Change

Learning Objectives

- ✓ Understand Lean principles and the tools used to improve processes
- ✓ Apply Lean techniques to reduce waste and improve efficiency
- ✓ Support Lean implementation and sustain continuous improvement initiatives



Duration

2 days



Target Learner

Managers, engineers, supervisors and professionals involved in Lean implementation, process improvement or operational performance.



Certification

Participants will receive a Certificate of Completion from ESS.



Maintenance Planning & Scheduling

Overview

This course focuses on the principles and practices of effective maintenance planning and scheduling within industrial environments. It highlights how structured planning, scheduling and work control can improve plant availability, reduce downtime and optimise maintenance costs. Participants will learn how to integrate maintenance activities with production requirements to deliver reliable and efficient operations.

Course Content

- Maintenance Function and Planning Principles
- Planning and Scheduling Processes
- Work Control and Maintenance Management Systems
- Understanding Failure and Maintenance Tactics
- Developing Maintenance Plans and Schedules
- Continuous Improvement in Planning and Scheduling

Learning Objectives

- ✓ Understand the role of planning and scheduling in maintenance performance and reliability
- ✓ Apply work control, planning and scheduling techniques to improve efficiency
- ✓ Develop and evaluate maintenance schedules to support operational performance



Duration

2 days



Target Learner

Maintenance planners, supervisors, engineers and operations personnel involved in maintenance planning, scheduling and work control processes.



Certification

Participants will receive a Certificate of Completion from ESS.



Maintenance Strategy

Overview

This course provides an understanding of how to develop and implement an effective maintenance strategy to support reliable and cost-efficient asset performance. It focuses on aligning maintenance activities with business objectives, reducing risk and improving operational performance. Participants will gain practical insight into creating a structured approach to maintenance that supports long-term reliability and efficiency.

Course Content

- Maintenance Strategy and Business Performance
- Developing Cost-Effective Maintenance Programmes
- Maintenance Task Selection and Planning
- Organisational Structure and Roles in Maintenance
- Using CMMS for Work Control and Improvement
- Continuous Improvement and Strategy Implementation

Learning Objectives

- ✓ Understand the role of maintenance strategy in improving performance and reducing costs
- ✓ Develop structured maintenance programmes aligned with business objectives
- ✓ Apply tools and frameworks to implement and sustain effective maintenance strategies



Duration

1 day



Target Learner

Managers, planners and professionals involved in developing or implementing maintenance strategies.



Certification

Participants will receive a Certificate of Completion from ESS.



Masterclass In Reliability Management

Overview

This programme provides a comprehensive understanding of reliability management and how it supports improved equipment performance and business competitiveness. It focuses on managing reliability across the asset lifecycle, helping organisations reduce downtime, improve efficiency and make informed maintenance decisions. The course combines theory with practical case studies to support real-world application.

Course Content

- Reliability Principles and Business Impact
- Reliability Modelling and Performance Assessment
- Reliability Centred Maintenance (RCM)
- Failure Modes and Maintenance Strategies
- Reliability Improvement Programmes
- Case Studies and Practical Applications

Learning Objectives

- ✓ Understand the key principles of reliability and their impact on equipment performance
- ✓ Apply reliability methods to support maintenance and operational decision making
- ✓ Develop and implement reliability improvement programmes to reduce downtime



Duration

3 days



Target Learner

Engineers, maintenance professionals, supervisors and reliability specialists involved in improving equipment performance and reliability.



Certification

Participants will receive a Certificate of Completion from ESS.



Practical Leadership Skills For The Maintenance Team Leader

Overview

This course develops the practical leadership skills required to effectively lead maintenance teams in today's demanding industrial environment. It focuses on improving team performance, motivation and communication, enabling participants to lead with confidence and support organisational goals. The programme provides practical tools and techniques that can be applied immediately in the workplace.

Course Content

- Role of the Maintenance Team Leader
- Leadership Styles and Self-Assessment
- Communication and Team Engagement
- Coaching and Motivating Teams
- Performance Management and Handling Underperformance
- Leading Change and Building High-Performing Teams

Learning Objectives

- ✓ Understand key leadership principles and apply them in a maintenance environment
- ✓ Develop communication, coaching and performance management skills
- ✓ Lead and motivate teams to improve performance and achieve organisational goals



Duration

2 days



Target Learner

Maintenance team leaders, supervisors and technical professionals responsible for leading and developing teams.



Certification

Participants will receive a Certificate of Completion from ESS.



Reliability Centered Maintenance For The Pharmaceutical Industry

Overview

This course provides a comprehensive introduction to Reliability Centred Maintenance (RCM) and its application within the pharmaceutical industry. It focuses on improving equipment reliability, safety and performance through structured analysis and maintenance strategy development. Participants will explore real-world case studies and apply RCM techniques to critical systems, gaining practical insight into effective implementation.

Course Content

- Introduction to RCM and Operating Context
- Functions, Functional Failures and Failure Modes
- Failure Effects and Consequence Analysis
- Maintenance Task Selection and Strategy Development
- Implementing and Sustaining RCM Programmes
- Case Studies and Practical Application

Learning Objectives

- ✓ Understand the principles of RCM and its role in improving reliability and performance
- ✓ Apply RCM methods to analyse failures and develop effective maintenance strategies
- ✓ Support implementation of RCM to drive continuous improvement and operational performance



Duration

3 days



Target Learner

Managers, engineers, supervisors and technical personnel responsible for asset performance and reliability within pharmaceutical or regulated environments.



Certification

Participants will receive a Certificate of Completion from ESS (CPD hours applicable).



Reliability Improvement Certificate

Overview

This 2-day course provides participants with a practical understanding of how to assess and improve equipment reliability across a range of asset types. It covers both technical and organisational aspects of reliability, helping bridge the gap between theory and day-to-day maintenance and operational practice. Participants will learn how to apply reliability tools and techniques to improve asset performance and support effective decision making.

Course Content

- Principles and Strategic Importance of Reliability
- Reliability Models, Risk and Performance Assessment
- Reliability in Design, Operation and Maintenance
- Data Collection, Analysis and Failure Management
- Reliability Tools (FMEA, RCM, Fault Tree Analysis)
- Reliability Improvement Programmes and Case Studies

Learning Objectives

- ✓ Understand reliability principles and their impact on asset performance
- ✓ Apply reliability tools and techniques to analyse failures and improve performance
- ✓ Develop strategies to enhance reliability and support cost-effective asset management



Duration

2 days



Target Learner

Engineering and maintenance managers, reliability engineers, project managers and asset professionals seeking to improve reliability performance.



Certification

Participants will receive a Certificate of Completion (CPD accredited).



Root Cause Analysis

Overview

This course provides a structured approach to Root Cause Analysis (RCA), enabling participants to identify and eliminate the underlying causes of failures. It focuses on developing problem-solving skills, supporting continuous improvement and reducing recurring issues. Participants will learn how to implement RCA processes to improve reliability, reduce downtime and enhance operational performance.

Course Content

- Introduction to Root Cause Analysis and Continuous Improvement
- RCA Process and Problem-Solving Frameworks
- RCA Tools and Techniques (5 Whys, Fishbone, Fault Tree Analysis)
- Event and Cause Analysis Methods
- Developing and Managing an RCA Programme
- A3 Reporting and Communication of Findings

Learning Objectives

- ✓ Understand the principles and process of effective root cause analysis
- ✓ Apply RCA tools to identify and eliminate underlying causes of failures
- ✓ Implement RCA practices to support continuous improvement and performance



Duration

1 day



Target Learner

Technicians, engineers, supervisors and managers involved in problem solving, maintenance and reliability improvement.



Certification

Participants will receive a Certificate of Completion from ESS



Total Productive Maintenance (TPM)

Overview

This course provides a practical introduction to Total Productive Maintenance (TPM) as a key element of Lean transformation. It focuses on improving equipment reliability, reducing downtime and building a stable and efficient manufacturing environment. Participants will gain an understanding of TPM principles and how they can be applied to support continuous improvement and operational performance.

Course Content

- Introduction to TPM and Lean Maintenance Principles
- TPM Pillars and Key Metrics (OEE, Losses)
- Asset Care, Condition Monitoring and Preventive Practices
- Root Cause Analysis and Failure Prevention (FMEA)
- 5S, Workplace Organisation and Team Engagement
- TPM Implementation and Continuous Improvement Roadmap

Learning Objectives

- ✓ Understand TPM principles and their role in improving reliability and performance
- ✓ Apply TPM tools to reduce downtime and improve equipment effectiveness
- ✓ Support the implementation of TPM to drive continuous improvement



Duration

2 days



Target Learner

Frontline employees, maintenance and production supervisors, and managers involved in improving equipment performance and implementing TPM.



Certification

Participants will receive a Certificate of Completion from ESS



Writing Practical Maintenance Routines

Overview

This course focuses on developing effective maintenance routines that support equipment reliability and availability. It explores how to design targeted and practical planned maintenance tasks, ensuring they are efficient, relevant and aligned with asset care strategies. Participants will gain the knowledge required to create clear and effective maintenance routines that improve performance.

Course Content

- Principles of Maintenance and Asset Care
- Understanding Failure and Maintenance Tactics
- Asset Care Plans and Maintenance Strategies
- Determining Maintenance Frequency and Task Selection
- Developing and Structuring Maintenance Routines
- Continuous Improvement and Data Management

Learning Objectives

- ✓ Understand how maintenance routines support reliability and asset performance
- ✓ Develop clear and effective maintenance routines based on failure and asset needs
- ✓ Apply structured approaches to improve planned maintenance programmes



Duration

2 days



Target Learner

Maintenance planners, supervisors, engineers and personnel responsible for developing and managing maintenance routines and asset care plans.



Certification

Participants will receive a Certificate of Completion from ESS

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PLC & Automation

- **Advanced Programmable Logic Controllers**
- **Certificate in Industrial Pneumatics Systems**
- **Certificate in Programmable Logic Controllers (PLCs)**
- **Deploying Control Strategies from Bang Bang to PID on PLC Systems**
- **Fault-Finding On PLC Systems**
- **Introduction to Programmable Logic Controllers 3-day programme**
- **PLC and Control System**
- **PLC Based Analog Automation**
- **PLC Based Automation and Human Machine Interfaces**
- **PLC Based Automation of Industry using Simulation**
- **PLC Based Communications via Modbus**
- **PLC Based Communications with HART**
- **PLC Based communications with Profibus DP**
- **PLC Based Discrete and Digital Automation**
- **PLC Based Kinematic Systems**
- **Profinet Communication protocol and automation integration**





Advanced Programmable Logic Controllers

Overview

This course provides an advanced understanding of Programmable Logic Controllers (PLCs) and their application in modern industrial environments. It builds on existing knowledge to develop practical skills in PLC programming, fault finding and system diagnostics. Delivered through a hands-on approach using industry-standard equipment, participants will gain the confidence to work with and troubleshoot PLC-controlled systems.

Course Content

- Advanced PLC Programming Concepts and Standards
- IEC 61131 Programming Languages and Structures
- PLC Fault Finding and Diagnostics
- Modular Programming and Code Development
- Industrial Communication Networks
- Practical Exercises using PLC Systems

Learning Objectives

- ✓ Develop structured PLC programs using industry-standard programming methods
- ✓ Apply PLC logic to diagnose and troubleshoot faults in automated systems
- ✓ Understand PLC communication networks and programming frameworks



Duration

3 days



Target Learner

Maintenance personnel, technicians and trades seeking to enhance their skills in PLC programming, automation and fault diagnosis.



Certification

Participants will receive a Certificate of Completion from ESS



Certificate in Industrial Pneumatic Systems

Overview

This QQI Level 6 programme provides learners with the knowledge and practical skills required to safely operate and maintain industrial pneumatic systems. It focuses on understanding system components, interpreting circuit diagrams and carrying out routine maintenance tasks to ensure efficient and reliable system performance.

Course Content

- Fundamentals of Industrial Pneumatic Systems
- Pneumatic Components and System Operation
- Circuit Diagrams and Sequence of Operation
- Maintenance of Air Service Units and Components
- Health and Safety in Pneumatic Systems
- Practical Maintenance and Troubleshooting

Learning Objectives

- ✓ Understand pneumatic system components and their operation
- ✓ Interpret circuit diagrams and analyse system behaviour
- ✓ Perform maintenance tasks to ensure safe and efficient system performance



Duration

5 days



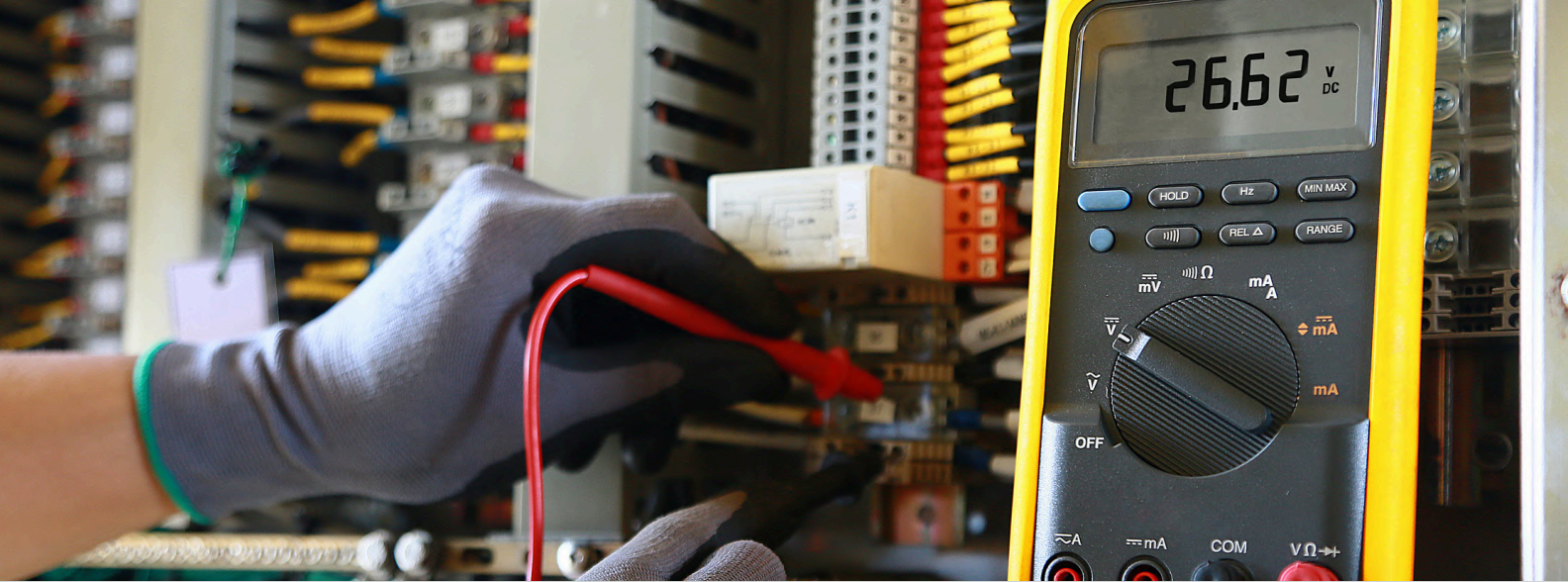
Target Learner

Technicians, maintenance personnel and engineers involved in the operation and maintenance of pneumatic systems.



Certification

Participants who successfully complete the programme will be awarded a QQI Level 6 Minor Award in Industrial Pneumatics.



Certificate in Programmable Logic Controllers (PLCs)

Overview

This QQI Level 6 programme provides learners with the knowledge and practical skills required to program and troubleshoot Programmable Logic Controllers (PLCs). It focuses on understanding PLC components, logic functions and fault diagnosis, enabling participants to work confidently with PLC-controlled systems in industrial environments.

Course Content

- Fundamentals of PLC Systems and Components
- PLC Logic Functions and Programming (Ladder Logic)
- Input and Output Devices and Circuit Interpretation
- PLC Fault Finding and Diagnostics
- Program Monitoring, Editing and Testing
- Practical PLC Programming and Troubleshooting

Learning Objectives

- ✓ Understand PLC components, logic functions and system operation
- ✓ Develop and modify PLC programs using ladder logic
- ✓ Diagnose and rectify faults in PLC-controlled systems



Duration

5 days



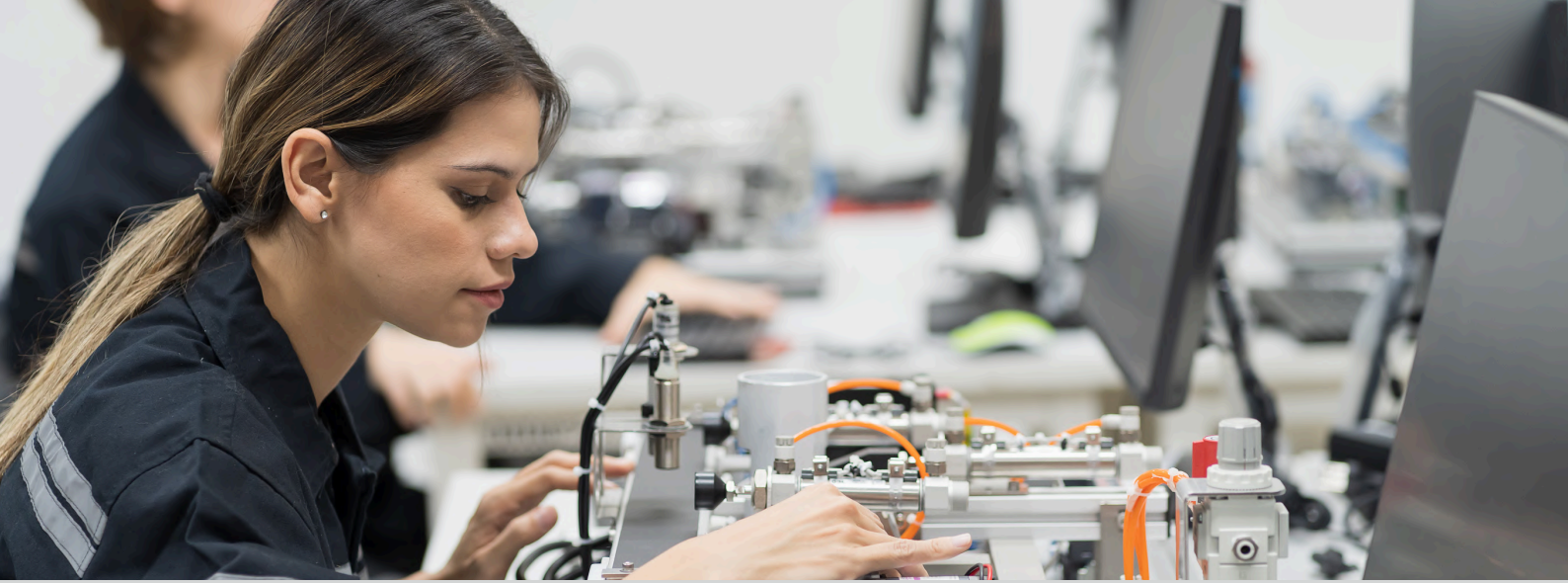
Target Learner

Technicians, maintenance personnel and engineers involved in automation, control systems and PLC programming.



Certification

Participants who successfully complete the programme will be awarded a QQI Level 6 Award in Programmable Logic Controllers



Deploying Control Strategies from Bang Bang to PID on PLC Systems

Overview

This course provides a practical understanding of control strategies used in PLC-based automation systems, from basic on/off control to advanced PID control. It focuses on how control systems influence production performance, helping reduce errors, downtime and waste. Delivered through a highly hands-on approach, participants will learn how to implement and optimise control strategies in real industrial scenarios.

Course Content

- Fundamentals of PLC Operation and Control Systems
- Control Strategies: Bang Bang and PID Control
- PLC Programming for Control Applications (Ladder Logic)
- Controller Parameters and System Response
- Communication with PLC Systems (TIA Portal)
- Fault Finding, Optimisation and Practical Exercises

Learning Objectives

- ✓ Understand control strategies and their impact on production performance
- ✓ Apply PLC programming to implement and optimise Bang Bang and PID control
- ✓ Analyse and adjust control parameters to improve system performance



Duration

2 days



Target Learner

Technicians, engineers and maintenance personnel involved in PLC systems, automation and process control.



Certification

Participants will receive a Certificate of Completion from ESS.



Fault-Finding On PLC Systems

Overview

This practical course focuses on developing effective fault-finding skills for PLC-controlled systems. It provides participants with hands-on experience in diagnosing faults using industry-standard equipment and techniques. The course equips learners with a structured approach to troubleshooting, enabling them to quickly identify and resolve issues in automated environments.

Course Content

- Fundamentals of PLC Systems and Ladder Logic
- PLC Fault-Finding Methodologies
- Use of I/O Lists and System Documentation
- Interpreting Electrical Drawings for Diagnostics
- Using PLC Tools and Onboard Diagnostics
- Practical Fault-Finding Exercises

Learning Objectives

- ✓ Understand PLC operation and common fault scenarios
- ✓ Apply structured fault-finding techniques to PLC systems
- ✓ Use documentation and diagnostic tools to identify and resolve faults



Duration

2 days



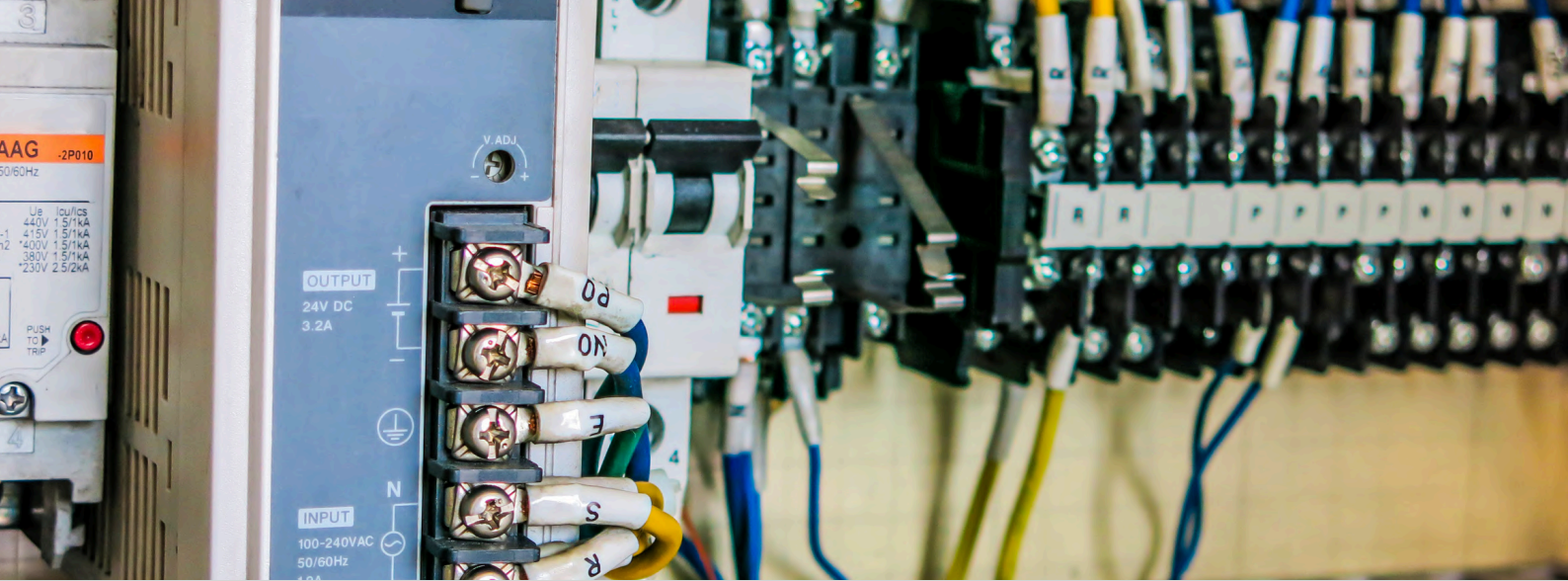
Target Learner

Electricians, mechanical fitters, supervisors and maintenance personnel involved in troubleshooting PLC-controlled systems.



Certification

Participants will receive a Certificate of Completion from ESS.



Introduction to Programmable Logic Controllers 3-day programme

Overview

This course provides a practical introduction to Programmable Logic Controllers (PLCs) and their role in modern industrial automation. It equips participants with the foundational knowledge required to understand PLC operation, basic programming and fault finding. Delivered through a hands-on approach using industry-standard equipment, learners will gain confidence in working with PLC-controlled systems.

Course Content

- Fundamentals of PLC Systems and Components
- Introduction to PLC Programming (Ladder Logic)
- Input and Output Devices and Data Types
- Timers, Counters and Logic Functions
- Program Uploading, Downloading and Storage
- Basic Fault Finding and Diagnostics

Learning Objectives

- ✓ Understand how PLC systems operate and their key components
- ✓ Develop basic PLC programs using standard logic functions
- ✓ Apply PLC knowledge to diagnose and troubleshoot basic faults



Duration

3 days



Target Learner

Maintenance personnel and technicians seeking an introduction to PLC systems and basic fault-finding skills.



Certification

Participants will receive a Certificate of Completion from ESS.



PLC and Control System

Overview

This course provides a practical introduction to electrical control systems and PLCs within industrial environments. It focuses on understanding electrical fundamentals, system components and how PLCs interact with field equipment. With a strong hands-on approach, participants will develop the skills required to work safely and effectively with control systems and carry out basic fault finding.

Course Content

- Electrical Fundamentals and Safety Principles
- Electrical Protection Devices (MCBs, RCDs, Fuses)
- Introduction to PLC Systems and Programming
- Digital and Analogue Signals (0–10V, 4–20mA)
- Electrical Schematics and System Wiring
- PLC Programming, Integration and Fault Finding

Learning Objectives

- ✓ Understand electrical principles, safety requirements and protection systems
- ✓ Develop basic PLC programming and system integration skills
- ✓ Apply fault-finding techniques using electrical drawings and PLC tools



Duration

3 days



Target Learner

Maintenance personnel, technicians and engineers working with electrical systems, automation and control equipment.



Certification

Participants will receive a Certificate of Completion from ESS.



PLC Based Analog Automation

Overview

This course provides a practical understanding of analog automation using PLC systems to control and monitor continuous processes. It focuses on working with analog signals, sensors and control devices to regulate variables such as temperature, pressure, flow and level. Delivered through a hands-on approach, participants will develop the skills required to implement and troubleshoot analog control systems in industrial environments.

Course Content

- Fundamentals of PLC Operation and Analog Control
- Analog Signals and Signal Processing (0–10V, 4–20mA)
- PLC Programming for Analog Inputs and Outputs
- Signal Scaling, Comparison and Control Logic
- Communication with PLC Systems (TIA Portal)
- Fault Finding and System Optimisation

Learning Objectives

- ✓ Understand analog control systems and their role in process automation
- ✓ Apply PLC programming techniques for analog inputs and outputs
- ✓ Diagnose and optimise analog control systems in real-world applications



Duration

2 days



Target Learner

Technicians, engineers and maintenance personnel working with PLC systems, process control and automation.



Certification

Participants will receive a Certificate of Completion from ESS.



PLC Based Automation and Human Machine Interfaces (HMI)

Overview

This course provides a practical understanding of PLC and HMI integration for industrial automation systems. It focuses on how PLCs control processes and how HMIs provide real-time monitoring and interaction through user-friendly interfaces. Delivered through hands-on exercises, participants will develop the skills required to design, implement and troubleshoot integrated PLC and HMI systems.

Course Content

- Fundamentals of PLC Operation and HMI Systems
- HMI Design and Interface Layout Principles
- PLC and HMI Communication (PROFINET, TIA Portal)
- PLC Programming and System Integration
- Data Handling, Tagging and System Configuration
- Fault Finding and System Optimisation

Learning Objectives

- ✓ Understand the role of PLC and HMI systems in industrial automation
- ✓ Develop and configure integrated PLC and HMI applications
- ✓ Diagnose and optimise automated systems using PLC and HMI tools



Duration

3 days



Target Learner

Technicians, engineers and maintenance personnel involved in automation, control systems and process monitoring.



Certification

Participants will receive a Certificate of Completion from ESS.



PLC Based Automation of Industry using Simulation

Overview

This course provides a practical introduction to PLC-based automation using simulation tools to model and control industrial processes. It enables participants to design, program and troubleshoot automated systems in a virtual environment, reducing the need for physical hardware. Through hands-on exercises, learners will gain experience in controlling process and manufacturing systems and optimising performance in simulated real-world scenarios.

Course Content

- Introduction to PLC Simulation and Virtual Automation
- Process Control and Automated Systems in Simulation
- PLC Programming for Simulated Environments
- System Design and Integration (Conveyors, Pumps, Motors)
- Fault Finding and Diagnostics in Simulation
- Performance Optimisation and System Improvement

Learning Objectives

- ✓ Understand how PLC simulation tools are used to model and control industrial systems
- ✓ Develop PLC programs for automated processes in a virtual environment
- ✓ Diagnose faults and optimise system performance using simulation tools



Duration

2 days



Target Learner

Technicians, engineers and individuals seeking to develop or enhance skills in PLC programming, automation and process control.



Certification

Participants will receive a Certificate of Completion from ESS.



PLC Based Communications via Modbus

Overview

This course provides a practical understanding of Modbus communication and its application in industrial automation systems. It focuses on how PLCs communicate with field devices, sensors and HMIs using Modbus protocols. Delivered through hands-on exercises, participants will learn how to configure, integrate and troubleshoot communication systems in real industrial environments.

Course Content

- Fundamentals of Modbus Communication (RTU, ASCII, TCP)
- Modbus Addressing, Data Types and Function Codes
- Master and Slave Configuration
- Integration of Modbus with PLC Systems
- Communication Diagnostics and Troubleshooting
- Optimisation of Data Exchange and System Performance

Learning Objectives

- ✓ Understand Modbus communication principles and system architecture
- ✓ Configure and integrate Modbus communication within PLC systems
- ✓ Diagnose and troubleshoot communication issues in industrial networks



Duration

3 days



Target Learner

Technicians, engineers and maintenance personnel involved in PLC systems, automation and industrial communications.



Certification

Participants will receive a Certificate of Completion from ESS.



PLC Based Communications with HART

Overview

This course provides a practical understanding of HART communication and its role in industrial automation and process control. It focuses on integrating smart field devices with PLC systems, enabling enhanced diagnostics, configuration and data exchange. Delivered through hands-on exercises, participants will gain experience in setting up, monitoring and troubleshooting HART communication systems.

Course Content

- Fundamentals of HART Communication and System Architecture
- HART Devices and Smart Instrument Integration
- Network Configuration (Point-to-Point and Multidrop)
- Interfacing HART with PLC Systems
- Communication Diagnostics and Troubleshooting
- System Optimisation and Practical Applications

Learning Objectives

- ✓ Understand HART communication principles and device integration
- ✓ Configure and interface HART systems with PLCs
- ✓ Diagnose and resolve communication issues in HART-enabled systems



Duration

2 days



Target Learner

Technicians, engineers and maintenance personnel involved in process control, instrumentation and industrial communications.



Certification

Participants will receive a Certificate of Completion from ESS.



PLC Based communications with PROFIBUS DP

Overview

This course provides a practical understanding of PROFIBUS DP communication and its application in industrial automation systems. It focuses on configuring and integrating PLCs with field devices for high-speed data exchange and control. Delivered through hands-on exercises, participants will gain experience in setting up, troubleshooting and optimising PROFIBUS DP networks in real industrial environments.

Course Content

- Fundamentals of PROFIBUS DP and Network Architecture
- Devices, Topology and Master-Slave Communication
- Network Configuration and Commissioning (GSD Files, Addressing)
- Integration of PROFIBUS DP with PLC Systems
- Diagnostics, Fault Finding and Troubleshooting
- Network Optimisation and Performance Improvement

Learning Objectives

- ✓ Understand PROFIBUS DP communication principles and system architecture
- ✓ Configure and integrate PROFIBUS DP networks with PLC systems
- ✓ Diagnose and resolve communication issues in industrial networks



Duration

2 days



Target Learner

Technicians, engineers and maintenance personnel involved in PLC systems, automation and industrial communications.



Certification

Participants will receive a Certificate of Completion from ESS.



PLC Based Discrete and Digital Automation

Overview

This course provides a practical understanding of discrete and digital automation using PLC systems. It focuses on controlling and monitoring systems that operate using digital signals, commonly found in manufacturing, assembly lines and material handling environments. Delivered through hands-on exercises, participants will develop the skills required to program, operate and troubleshoot digital automation systems.

Course Content

- Fundamentals of PLC Operation and Digital Automation
- Digital Signals and Control Logic
- PLC Programming (Latches, Interlocks, Timers, Counters)
- Sequential Control and Automation Processes
- Communication with PLC Systems (TIA Portal)
- Fault Finding and System Troubleshooting

Learning Objectives

- ✓ Understand digital automation systems and their industrial applications
- ✓ Apply PLC programming techniques for discrete control systems
- ✓ Diagnose and resolve faults in digital automation environments



Duration

2 days



Target Learner

Technicians, engineers and maintenance personnel working with PLC systems, automation and manufacturing processes.



Certification

Participants will receive a Certificate of Completion from ESS.



PLC Based Kinematic Systems

Overview

This course provides a practical understanding of PLC-based motion control and kinematic systems used in industrial automation. It focuses on controlling movement and positioning through the integration of motors, actuators and sensors. Delivered through hands-on exercises, participants will develop the skills required to program, troubleshoot and optimise motion-based systems in real industrial applications.

Course Content

- Fundamentals of PLC Operation and Motion Control
- Principles of Kinematics and System Integration
- PLC Programming for Motion Applications
- Integration of Motors, Actuators and Feedback Devices
- Diagnostics and Troubleshooting of Motion Systems
- System Optimisation and Performance Improvement

Learning Objectives

- ✓ Understand kinematic systems and their role in industrial automation
- ✓ Develop PLC programs to control motion and positioning systems
- ✓ Diagnose and optimise motion control systems for improved performance



Duration

2 days



Target Learner

Technicians, engineers and maintenance personnel involved in automation, robotics and motion control systems.



Certification

Participants will receive a Certificate of Completion from ESS.



PROFINET Communication protocol and Automation Integration

Overview

This course provides a practical understanding of PROFINET communication and its role in industrial automation systems. It focuses on enabling high-speed, real-time data exchange between PLCs, HMIs and field devices. Delivered through hands-on exercises, participants will gain the skills required to configure, integrate and troubleshoot PROFINET networks in industrial environments.

Course Content

- Fundamentals of PROFINET and Network Architecture
- Devices, Topology and Industrial Ethernet Communication
- Network Configuration and Commissioning (Addressing, GSD Files)
- Integration of PROFINET with PLC Systems
- Diagnostics, Fault Finding and Troubleshooting
- Network Optimisation and Performance Improvement

Learning Objectives

- ✓ Understand PROFINET communication principles and system architecture
- ✓ Configure and integrate PROFINET networks with PLC systems
- ✓ Diagnose and resolve communication issues in industrial networks



Duration

2 days



Target Learner

Technicians, engineers and maintenance personnel involved in PLC systems, automation and industrial communications.



Certification

Participants will receive a Certificate of Completion from ESS.



Contact & Information

We are here to support your journey. Feel free to reach out to us through the following channels:

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