



Certificate in

Industrial Manufacturing and Maintenance Skills



Leaders in Asset Management & Maintenance Reliability through People

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Certificate in Industrial Manufacturing & Maintenance Skills

The CIMMS is designed to give operators and technicians the knowledge, skills, and competence to undertake a broad range of technical, maintenance and service tasks in an industrial manufacturing setting.



TYPE:
Certificate

MODE:
Part-time
(Block-release,
blended delivery)

DURATION:
One year

NFQ LEVEL:
6

VALIDATED BY:
QQI

CAMPUS:
**Dublin
Limerick
Cork**

ESS provide Asset Optimisation and Compliance through People. We work with people to implement and carry out maintenance and asset management and to optimise performance. We believe that it is people that make things work and that improvements and sustainability are driven by supporting, training and educating people.

Our Values



Respect



Accountability



Act like an owner



Innovating & learning



Challenge & Support



Course Overview:

The QQI-accredited Certificate in Industrial Manufacturing and Maintenance Skills is a one-year part-time programme that provides key knowledge, skills, and competencies in Industrial Manufacturing and Maintenance related subjects.

The modern manufacturing technician is required to be competent in a broad range of cross-functional technical skills (Electrical/HVAC/Refrigeration) and soft skills (Communication). There is a significant demand in industry for such multi-skilled technicians.

These technicians are working in highly regulated industries including, but not limited to, pharmaceutical, life sciences, MedTech, and food and drink manufacturing and should therefore be familiar with Good Manufacturing Practices (GMP) and Quality Regulations.

Certificate in Industrial Manufacturing and Maintenance Skills

- The QQI Level 6 Certificate in Industrial Manufacturing and Maintenance Skills is available on a part-time basis and aims to enable the modern technician to be industry-ready and relevant.
- Learners are introduced to a broad range of technical and soft skills to support working in industry or to enhance employment opportunities.
- The graduate will be able to work both autonomously and cross-functionally across departments within industry.
- The practical nature of the coursework lends to preparation for work in industry.
- Part-time learning allows students already working in the area extra time to hone skills.
- This programme may also facilitate learners applying for progression to third-level programmes in NFQ Level 6 (plus) engineering programmes within third-level colleges.



Entry Requirements

Entry requirements (if under 23 years) are a minimum of grade O6 / H7 in the Leaving Certificate, or equivalent, in 5 subjects. The subjects must include mathematics and English, Irish or another language.

Mature learners, i.e., applicants over the age of 23, may also apply based on work experience and / or life experience by demonstrating that they have reached the required standards of knowledge, skills, and competence.

The English language entry requirements for the programme are CEF B2+ or equivalent. Candidates with English language levels below CEF B2+ must first reach this minimum standard before enrolling on the academic programme.

Ideally, learners will have some prior technical or mechanical experience or knowledge and/or exposure to a manufacturing environment

Course Highlights

- Graduates will be equipped with a hybrid of technical and soft skills.
- There is a core message of safety throughout the programme.
- Graduates will be able to communicate effectively with colleagues in the workplace.
- An emphasis that quality is everyone's responsibility.
- Real benefits to employers in improving efficiency, effectiveness and productivity of systems while applying ethical, safe, and sustainable improvements.





5 ECTS

Industrial Electrical Safety and Systems

The Industrial Electrical Safety and Systems module is designed around industrial manufacturing and maintenance personnel, to support an understanding of working with industrial electrical systems. This module will allow the learner to work on industrial equipment, to help them diagnose and repair electrical faults in maintenance and production equipment in a safe and knowledgeable manner.

Learners will be introduced to a clear understanding of the fundamental electrical principles, laws, and concepts relevant to industrial electrical systems as the module design of a mix of theoretical and practical elements.

Course Structure:

- **Module 1**
- Module 2
- Module 3
- Module 4

Minimum intended module learning outcomes

On successful completion of this module, learners can:

1. Recognise the safety standards associated with working with electrical circuits and understand how to use electrical test equipment correctly.
2. Appraise, apply the principles, and perform calculations on AC and DC electric circuits.
3. Apply power calculations to electrical systems and understand the effects on transmission and distribution of electrical power in Ireland.
4. Describe the operation, configuration, and testing of AC induction motors, interpret electrical drawings, and build a basic electrical circuit.



5 ECTS

Fundamentals of GMP and Quality Regulations

The module aims to provide students with an introduction to and understanding of the principles of quality management in the manufacturing environment. It equips learners with a fundamental grounding in the regulatory requirement for GMP, validation and calibration.

This module is designed to emphasise the role utilities and facilities play in maintaining a safe and fully operational GMP environment.

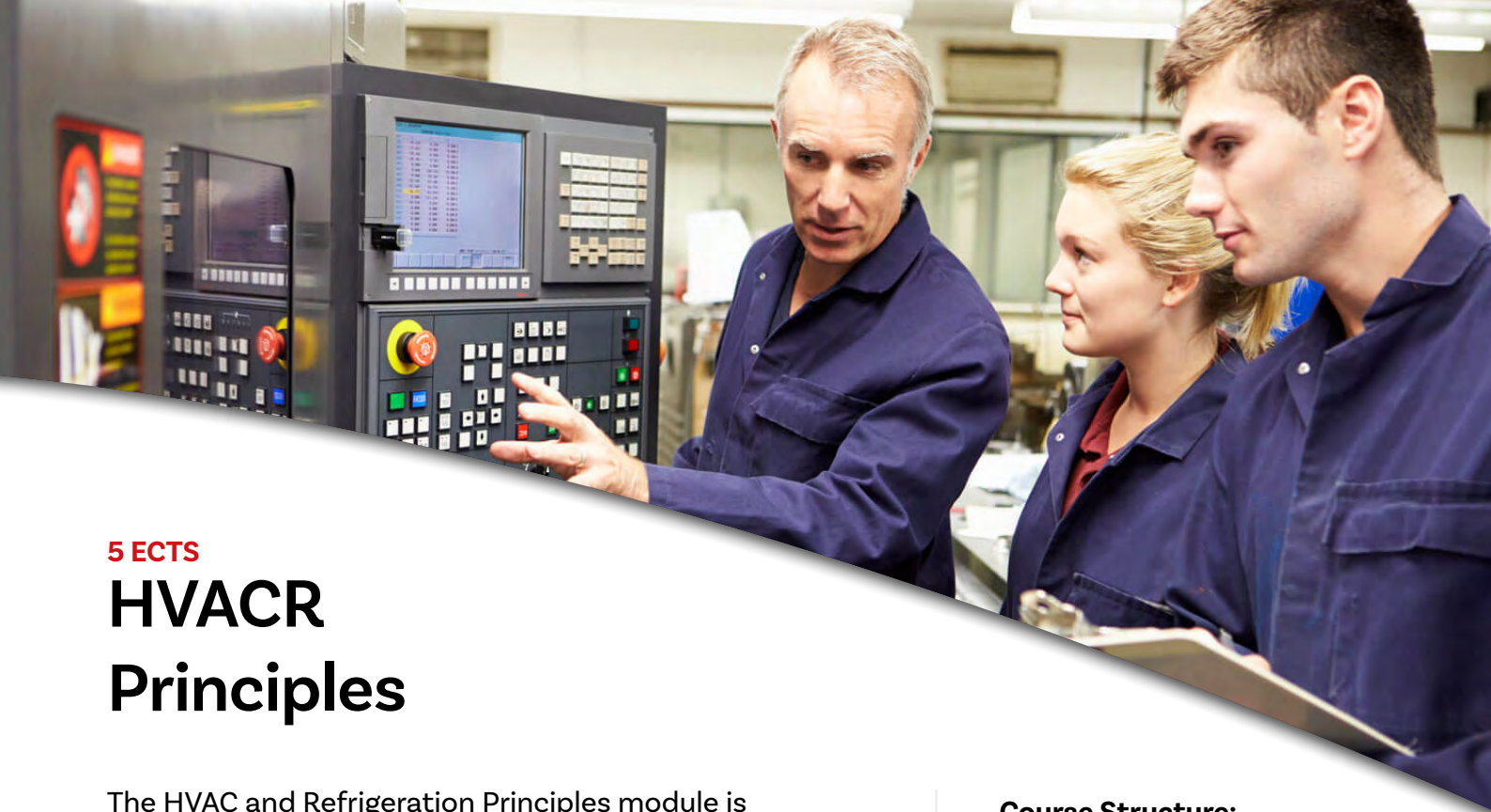
Course Structure:

- Module 1
- **Module 2**
- Module 3
- Module 4

Minimum intended module learning outcomes

On successful completion of this module, learners can:

1. Describe the application of Quality Management Systems as prescribed by current guidance documents e.g. 21CFR 820 and ISO standards e.g. ISO 13485:2016.
2. Express the relevance of GMP practices and compliance in the manufacturing environment, considering such elements as good documentation practices, change control.
3. Explain the consequence of calibration and validation within a GMP environment within the context of the industry standard guidelines for validation and required documentation.
4. Identify the factors that affect facilities management, equipment, and processes in industry, as they impact on the layout of manufacturing sites.



5 ECTS

HVACR Principles

The HVAC and Refrigeration Principles module is designed around industrial manufacturing and maintenance personnel, to equip the learner with the knowledge, skill, and competence to maintain the efficient operation of refrigeration and HVAC plant and systems.

This module delivers the key foundational elements of HVAC and Refrigeration Principles and Systems, it covers topics that inform learners about air handling units, and vapour compression cycles.

Course Structure:

- Module 1
- Module 2
- **Module 3**
- Module 4

Minimum intended module learning outcomes

On successful completion of this module, learners can:

1. Identify the main components, control systems and standards in a typical Air Handling Unit.
2. Explain the processes air goes through in a typical HVAC using a Psychrometric chart and outline practical skills required to ensure efficient operation.
3. Identify the major components and their functions on a Vapour compression system.
4. Carry out an analysis of a vapour compression cycle using a pressure enthalpy chart.



5 ECTS

Workplace Communication

This module aims to introduce learners to the necessary communication process, tools and techniques used within industry. It equips learners with skills in verbal and non-verbal communication, questioning, active listening, creating, and delivering effective presentations and technical written communication.

The learner will develop detailed knowledge of the responsibilities surrounding effective communication in the context of formal or informal horizontal and vertical organisational communication linkages.

The module explores how to present an external image that is both positive and professional and employ various methods to manage time, stress, and conflict.

Course Structure:

- Module 1
- Module 2
- Module 3
- **Module 4**

Minimum intended module learning outcomes

On successful completion of this module, learners can:

1. Use personal communication techniques, demonstrate key active listening skills, write business documentation, and construct professional correspondences.
2. Demonstrate verbal (and non-verbal) communication skills to make an effective presentation that is both positive and professional.
3. Identify and employ various methods to manage stress, time, and conflict.
4. Consider own professional skills and competencies as required to support learning and ongoing professional development, and ethical practice as a technician.



Progression

Higher National Certificate in
Manufacturing Engineering,
Griffith College

Bachelor of Engineering
in Industrial and Systems
Engineering, Griffith College

NFQ Level 6 (plus) engineering
programmes within third-level
colleges in Ireland

Learn More   

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This collaboration between ESS and Griffith College will provide accredited higher education qualifications in the manufacturing and maintenance sector in Ireland.



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