

## Engineering Technician Apprenticeship Level 3

Study Mode: Full Time Programme Component | Course Level: 3

### Is this course right for me?

Overview of the role

Designing, building, servicing and repairing a range of engineering products and services.

Details of Standard

The following Standard reflects employers' requirements for the skills, knowledge and behaviours expected from someone to be competent in the job role.

Core occupational profile

Engineering technicians in the aerospace, aviation, automotive, maritime defence and wider advanced manufacturing and engineering sector are predominantly involved in highly skilled, complex work and must, as a minimum be able to:

- Apply safe systems of working
- Make a technical contribution to either the design, development, quality assurance, manufacture, installation, commissioning, decommissioning, operation or maintenance of products, equipment, systems, processes or services
- Apply proven techniques and procedures to solve engineering/manufacturing problems
- Demonstrate effective interpersonal skills in communicating both technical and non-technical information
- Have a commitment to continued professional development

Engineering technicians take responsibility for the quality and accuracy of the work they undertake within the limits of their personal authority. They also need to be able to demonstrate a core set of behaviours in order to be competent in their job role, complement wider business strategy and development. This will enable them to support their long term career development.

Engineered and manufactured products and systems that engineering technicians work on could involve mechanical, electrical, electronic, electromechanical and fluid power components/systems.

Typical job titles include engineering technician, aerospace technician, aviation engineer, maritime engineering, machinist, mechatronics engineer and toolmaker.

There are two specialisms within the Standard:

- Mechatronics Maintenance
- Mechanical

Role profile for Mechatronics Maintenance Technician

Mechatronics maintenance technicians ensure that plant and equipment perform to the required standard to facilitate production targets regarding safety, quality, delivery and cost within high value manufacturing environments.

Typically the work will cover a broad range of activities including installation, testing, fault finding and the ongoing planned maintenance of complex automated equipment. This requires the application of a complex blend of skills, knowledge and occupational behaviours across the electrical, electronic, mechanical, fluid power and control systems disciplines..

## Entry Requirements

Individual employers will set the recruitment and selection criteria for their apprenticeships.

In order to optimise success, candidates will typically have four GCSEs at Grade C/4 or equivalent, including maths (Grade B/5), English and a science.

## What will I learn?

### CORE KNOWLEDGE, SKILLS AND BEHAVIOUR REQUIREMENTS

#### KNOWLEDGE

Engineering technicians are able to demonstrate knowledge and understanding of:

- Importance of complying with statutory, quality, organisational and health and safety regulations.
- General engineering/manufacturing mathematical and scientific principles, methods, techniques, graphical expressions, symbols formulae and calculations used by engineering technicians.
- Structure, properties and characteristics of common materials used in the sector.
- Typical problems that may arise within their normal work activities/environment.
- Approved diagnostic methods and techniques used to help solve engineering/manufacturing problems.
- Importance of only using current approved processes, procedures, documentation and the potential implications for the organisation if this is not adhered to.
- Interpreting relevant engineering/manufacturing data and documentation in order to complete their job role.
- Different roles and functions in the organisation and how they interact.
- Why it is important for an organisation to continually review their processes and procedures.

In addition, mechatronics maintenance technicians will require additional specialist knowledge:

- Mathematical techniques, formula and calculations in a mechatronics maintenance environment and the type of equipment being maintained.
- Mechanical, electrical, electronic, fluid power and process control principles in a mechatronics maintenance environment.
- How equipment being maintained functions and operating parameters in individual components and how they interact
- Fault diagnostic methods, techniques and equipment used when maintaining equipment and systems.
- Condition monitoring methods and equipment used and understand how the information gained supports the planning of maintenance activities.
- How to minimise machinery downtime by implementing planned preventative maintenance programmes.

## SKILLS

- Obtaining, checking and using the appropriate documentation (such as job instructions, drawings, quality control documentation).
- Working safely at all times, complying with health, safety and environmental legislation, regulations and organisational requirements.
- Planning and where applicable obtaining all the resources required to undertake the work activity.
- Undertaking the work activity using the correct processes, procedures and equipment.
- Carrying out the required checks (such as quality, compliance or testing) using the correct procedures, processes and/or equipment.
- Dealing promptly and effectively with engineering/manufacturing problems within the limits of their responsibility using approved diagnostic methods and techniques and report those which cannot be resolved to the appropriate personnel.
- Completing any required documentation using the defined recording systems at the appropriate stages of the work activity
- Restoring the work area on completion of the activity and where applicable return any resources and consumables to the appropriate location.

In addition, mechatronics maintenance technicians will require additional specialist skills:

- Reading and interpreting relevant data and documentation used to maintain components, equipment and systems.
- Carrying out condition monitoring of plant and equipment • Carrying out planned maintenance activities on plant and equipment.
- Carrying out complex fault diagnosis and repair activities on high technology engineered systems such as maintaining mechanical equipment, fluid & pneumatic power equipment, electrical & electronic equipment and process control equipment.
- Carrying out confirmation testing and subsequent smooth hand over of equipment & plant support the installation, testing and commissioning of equipment (where applicable)..
- Contributing to the business by identifying possible opportunities for improving working practices, processes and/or procedures.

## BEHAVIOUR

The required behaviours of an engineering technician are:

Personal responsibility, resilience and ethics: Comply with health and safety guidance and procedures, be disciplined and have a responsible approach to risk, work diligently at all times, accept responsibility for managing time and workload and stay motivated and committed when facing challenges. Comply with any organisational policies/codes of conduct in relation to ethical compliance..

Work effectively in teams: Integrate with the team, support other people, consider implications of their actions on other people and the business.

Effective communication and interpersonal skills: Open and honest communicator, communicating clearly using appropriate methods, listening to others and have a positive and respectful attitude.

Focus on quality and problem solving: Follow instructions and guidance, demonstrates attention to detail, follow a logical approach to problem solving and seek opportunities to improve quality, speed and efficiency.

Continuous personal development: Reflect on skills, knowledge and behaviours and seeks

opportunities to develop, adapt to different situations, environments or technologies and have a positive attitude to feedback and advice.

## How will I be assessed?

Throughout the programme the apprentice will receive expert training from highly qualified staff A qualified assessor will provide an induction and regular workplace assessments.

During the final phase of the programme, the apprentice will be required to undergo an end point assessment and demonstrate to their employer how they have achieved full occupational competence against, skills, knowledge and behaviours, set out in the Standard.

## What can I do next?

Apprentices can progress to the Engineering Level 4 HNC.

Completion of the apprenticeship is designed to be recognised by relevant professional engineering institutions at the appropriate level of professional registration (EngTech).

## Delivery

**Location:** Work-based & College

**Start Date:** 02/09/2024

**Day:**

**Time:**

**Course Fee:**

**Course Code:** X0017

**Study Mode:** Full Time Programme Component

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