



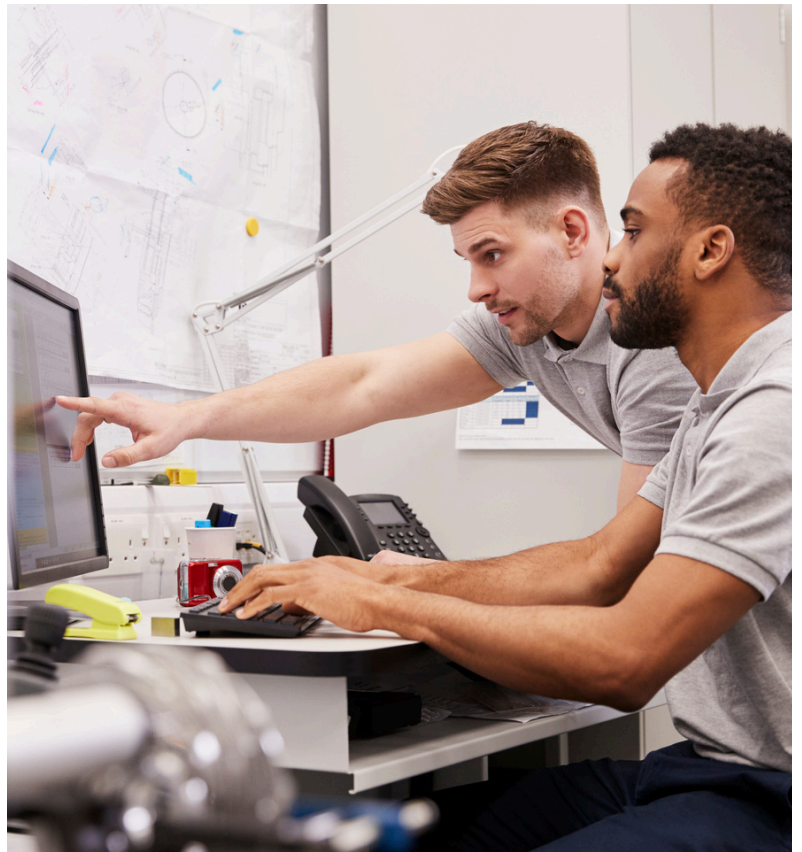
Engineering Manufacturing Technician Level 4

Apprenticeship Standard



wmc.ac.uk/apprenticeships

Overview



The Engineering Manufacturing Technician may work in a large or small engineering / manufacturing organisation providing products and services in a wide range of sectors, such as Automotive, Chemical Processing and Materials Manufacturers.

The Engineering Manufacturing Technician provides specialist technical support for engineers, so that organisations can develop, produce or test new/existing products, processes, or procedures to meet customers' specifications. Engineering Manufacturing Technicians gather and analyse information and data from a range of sources. They will make decisions, solve problems and update technical documentation, reports or specifications. They will be involved in quality, production schedules and targets, and costing how a product must be designed, manufactured, tested, modified, maintained, stored, transported, commissioned or decommissioned.

Duration:

42 months + 3 months for the End Point Assessment (EPA).

Entry Guidelines:

English & maths at GCSE grade A*-C/4-9 or Functional Skills level 2.

Level 3 Engineering Diploma/Extended Diploma or A Levels including Maths & Physics

Apprentices must provide copies of their English, maths and Engineering certificates before enrolment onto the apprenticeship.



Engineering Manufacturing Technician Level 4

Course Overview

Pre-programme	On Programme Learning covering Skills, Knowledge & Behaviours	Gateway	Independent End Point Assessment
Initial assessment English & Maths	HNC Engineering/Manufacturing Level 4 (Day release, Twelve Quays Campus)	English level 2 Maths level 2 HNC Engineering/Manufacturing Level 4	
Skills Scan	Portfolio of evidence to be built during on programme learning	E-portfolio of evidence	Observation with questioning
Induction with Trainer Assessor	On Programme Assessments & Reviews: 6-8 weekly sessions with Trainer Assessor & 8-10 week Progress Reviews with apprentice and employer		Professional Discussion

Course Details

This apprenticeship programme is designed to develop the knowledge, skills and behaviours required to be an effective Engineering Manufacturing Technician.

The apprentice's Knowledge element of the course will cover:

- Quality management systems used such as ISO9001, AS9100, ISO 14001 and TS16949.
- Different manufacturing methods used, their applications, such as machining, joining, forming, assembling, shaping, processing, printing, moulding, extruding and casting.
- Core engineering principles such as mathematics, science, mechanical and electrical/electronic applications relevant to manufacturing and engineering activity undertaken.
- Statutory and organisation health and safety policies, procedures and regulations that must be adhered to in a manufacturing and engineering environment including the risk assessment process, procedures and documentation.
- Project management techniques, such as Strengths, Weaknesses, Opportunities, Threats (SWOT), stakeholder matrices, risk mapping, radar chart and summary risk profiles.
- Engineering and manufacturing related documentation used such as job cards/build records, 2D and 3D drawings/models, Bill of Materials, Cost Analysis Reports, Compliance Report, Standard Operating Instructions, Standard Process Instructions, Engineering Query Notifications and Drawing Query Notifications.
- How organisations manage and monitor internal and or supplier performance to ensure that cost, quality, delivery and sustainability objectives are being delivered.
- Different methods, tools and frequency used to check quality in manufacturing and engineering including measurements such as (dimensions, weight, signal, temperature, time,) and testing (such as non-destructive and destructive).
- The impact of sustainability and environmental efficiency and how such matters influence manufacturing decisions.

The Occupational Skills element of the course will include:

- Read and extract relevant engineering and manufacturing related data and information (such as workplans/project plans, schedules, drawings, specifications, production data, quality reports, costing data, statistical information) drawing accurate conclusions and making informed decisions.
- Analyse and interpret data and information in order to generate manufacturing engineering documentation such as Parts Per Million (PPM) quality adherence, cost analysis and test data.
- Communicate using the appropriate method for the audience such as, formal and informal presentations, written reports, verbal, electronic, social media and incorporating relevant and appropriate data and/or metrics.
- Use the approved process and quality compliance procedure to create or amend engineering and/or manufacturing documentation.
- Use lean tools and techniques, such as Six Sigma, 8 Wastes, Workplace organisation such as 5S's (sort, set in order, shine, standardise and sustain), Kaizen and Poka-Yoke (error proofing).
- Apply documentation control processes and procedures such as format, location, access, authorisation.
- Use financial planning, recording and review processes and documentation such as departmental budgets, estimating, cost control, cost forecasting, and investment appraisal



Skills & Behaviours

The **Skills & Behaviours** element of the apprenticeship is to be completed with support from a Trainer Assessor making periodic visits to the apprentice in the workplace. The Trainer Assessor will support and guide the apprentice to ensure that they are developing the skills and competency required in accordance with the apprenticeship standard, including:

- effective communication and teamwork,
- ability to work independently and take responsibility for initiating and completing tasks,
- time management and the ability to adapt to change.

The apprentice will use the e-portfolio system called OneFile to build a portfolio of work throughout the development stage, which is a key component of End Point Assessment and demonstrates their occupational competency.

Gateway

Once the apprentice has completed all the required elements of the apprenticeship and their manager and Trainer Assessor agree that they are ready for the end point assessment, they will progress through the Gateway to undertake their End Point Assessment.

A completed portfolio of evidence is a compulsory End Point Assessment (EPA) gateway requirement that supports the Interview component.

The apprentice's employer must sign-off the portfolio of evidence, that has been completed by the apprentice during their programme, to confirm the apprentice has demonstrated the knowledge, skills and behaviours assigned to this apprenticeship standard.



End Point Assessment

The End Point Assessment must only start once the employer is satisfied that the apprentice is consistently working at or above the level set out in the occupational standard, that means they have achieved occupational competence.

End Point Assessment (EPA) normally takes 3 months to complete and consists of:

- Observation with Questioning
- Professional Discussion

Assessment Method 1: Observation with Questioning

a. The observation will take place in the workplace and will last three hours; the following activities

must be observed:

- i. Complying with Health and Safety requirement in their immediate working environment.
- ii. Demonstrating work task(s) being received, agreed and relevant information being extracted in order to complete the required activity.
- iii. Carrying out the required task(s) in line with organisation's standard operating procedures (SOPs).
- iv. Completing, saving and storing task(s) outcomes in the appropriate format and location, for example using a PDF format on the organisation's secure computer system.

b. Questions will be asked after the observation is complete and this will take up to 30 minutes.

Assessment Method 2: Professional discussion supported by a portfolio of evidence

The professional discussion must last for 60 minutes and must cover the following:

- Problem Solving & Communication
- Project, Time Management & Quality Standards
- Manufacturing Principles, Methods & Applications
- Commercial Considerations
- Behavioural Expectations

The portfolio of evidence (that has been completed by the apprentice during their programme) will be used as a source of evidence by which apprentices can exemplify their responses to questions asked by the assessor.

Grading & Progression



Apprenticeship grading

The available grades for this apprenticeship programme are **Distinction, Pass or Fail**.

Where can apprentices progress to?

The apprentice may choose to progress on to a higher level position in Engineering and Manufacturing.

