# ENGINEERING MANUFACTURING TECHNICIAN (ELECTRICAL & ELECTRONIC ENGINEERING) APPRENTICESHIP LEVEL 4

**For new or existing staff**

## Qualification

**Pearson BTEC HNC in Electrical and Electronic Engineering for England**

**Completers may want to progress to Embedded Electronic Systems Design and Development Engineer Degree Apprenticeship Level 6**

**The broad purpose of the occupation is to provide specialist technical support for engineers, so that organisations can develop, produce or test new and existing products, processes, or procedures to meet quality, cost and delivery requirements, as efficiently and effectively as possible. Products and systems that Engineering Technicians work on could involve mechanical, electrical, electronic, electromechanical and fluid power components/systems.**

**Delivery model and duration:**
1 day per week for 2 years, followed by the time working on demonstrating the Knowledge, Skills and Behaviours required for the Apprenticeship Standard.

**Duration: 42 months plus 6 months for End Point Assessment**
**Ideal for:**

This apprenticeship is ideal for engineers with 12 months or more experience, as well as for those who finished Level 3 apprenticeship or a similar full-time course and looking to advance their skills and knowledge.

**The apprenticeship will cover the following core areas:**

- Engineering Maths
- Engineering Project
- Production Engineering for Manufacturing
- Quality and Process Improvement
- Engineering Design
- Automation, Robotics and PLC
- Electrical and Electronic Principles
- Electrical Machines

**Benefits to business:**

- Fill skills gaps in your organisation
- Keep the business up to date with the latest industry knowledge and innovative practice
- Develop new talent or existing employees looking to progress in their careers
- Benefit from full support from GC

**Entry Criteria:**

- GCSEs in English and maths at grade 9-4 or A* - C. Plus Level 3 Qualification in Engineering or a Maths based subject.

**Benefits for learners:**

- Combine on-the-job training with academic study to gain the latest technical knowledge and practical industry experience at no cost
- Gain a valuable, nationally recognised qualification

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## End Point Assessment

The End Point Assessment will test the entire Standard, and be undertaken as follows:

- Assessment method 1: Observation with questioning
- Assessment method 2: Professional discussion supported by a portfolio of evidence

## Components

- BTEC HNC in Engineering for England
- Portfolio of evidence, reflecting workplace practice and mapped to the Knowledge, Skills and Behaviours in the apprenticeship standard.

## Skills

- Read and extract relevant engineering and manufacturing related data and information (such as workplans or project plans, schedules, drawings, specifications, production data, quality reports, costing data, statistical information) drawing accurate conclusions and making informed decisions
- Use project management tools, such as Strengths, Weaknesses, Opportunities, Threats (SWOT), stakeholder matrices, risk mapping, radar chart and summary risk profiles
- Use problem solving tools such as Root Cause Analysis (RCA) Process Failure Modes Effects Analysis (PFMEA), Fishbone, Practical Problem Solving (PPS) and Advanced Product Quality Planning (APQP)
- 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 or metrics
- Use the approved process and quality compliance procedure to create or amend engineering 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
- Use computer based software systems or packages such as Computer Aided Design (CAD), Data Analytics and Databases
- Identify and use a range of engineering problem solving tools to find and implement solutions
- Effective use of all documentation processes and procedures within a complex engineering environment
- Confident and experienced in calculating quality adherence performance measures
- Able to use confidently and expertly lean tools and techniques
- Able to use effectively and apply a range of Project Management techniques to ensure a positive outcome

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