

L3 APPRENTICESHIP

ENGINEERING TECHNICIAN (MACHINIST / TOOLMAKER)

Overview

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.

Entry requirements

Grade 4 GCSE (C) or above in English and Maths

Who is the course for?

Machinists in the Advanced Manufacturing Engineering sector are predominantly involved in highly skilled, complex and precision work, machining components from specialist materials using conventional and/or CNC machine tools such as centre lathes, vertical and horizontal milling machines, horizontal and cylindrical grinding machines, electro discharge machines, single and multi-axis CNC machine tools centres. They must be able to use and interpret engineering data and documentation such as engineering drawings, technical data and computer-generated programmes. They will be expected to be able set up, operate and adjust/edit equipment settings as applicable to the machine tool being used. When using CNC equipment, they will be expected to be able to produce, prove and/or edit programmes. During and on completion of the machining operations they will be expected to measure and check the components being produced and adjust the equipment/programme to ensure components meet the required specification. They will be able to work with minimum supervision, taking

KEY INFORMATION

Typical Duration:
42 Months + 3 months EPA

Taught Days:
One day every week term time only

Delivery Location:
Truro

Funding value:
£26,000

(£1,300 employer contribution if required)

responsibility for the quality and accuracy of the work they undertake. They will be proactive in finding solutions to problems and identifying areas for improving the business.

Programme content

Knowledge

- Understand mathematical techniques, formula and calculation involved in the machining processes such as speeds and feeds, calculating angles/tapers, material removal.
- Understand the practical and theoretical uses of the machines used, and their applications.
- Understand the work-holding devices, cutting tools, and setting up procedures, in adequate depth to provide a sound basis for carrying out the activities, correcting faults and ensuring the work output is to the required specification.

Skills

- Read and interpret relevant data and documentation used to produce machined components.
- Determine the most efficient and effective approach to machine the component using a range of tools, machining process and Techniques.
- Select and set up the correct tooling and work holding devices.
- Set and adjust the machine operating parameters to produce the work pieces to the required specification.
- This will involve setting feeds and speeds for roughing and finishing operations.
- Select and use a range of measuring and testing equipment to check components are to the required quality and accuracy.
- Produce complex and specialist components as a one-off test and trial work piece and/or producing components in small or large batches.
- Contribute to the business by identifying possible opportunities for improving working practices, processes and/or procedures.

Behaviours

- Personal responsibility, resilience and ethics. Comply with health and safety guidance and procedures, be disciplined and have a responsible approach to risk, always work diligently, 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.
- Focus on quality and problem solving.
- 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.

Gateway

- A Foundation Phase
- A Development Phase
- An End Point Assessment

In order to optimise success, candidates will typically have 4 GCSEs at Grade C/4 or equivalent, including Mathematics, English and a Science.



End point assessment

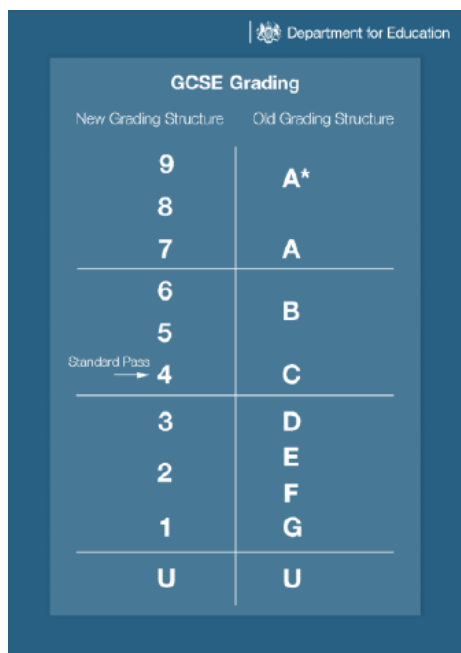
EPA methods

- An Occupational Competence Validation Interview (Viva) drawing from a portfolio of evidence of occupational competence.
- Professional competence assessment undertaken by independent assessor(s) from the relevant PEI/MIAA [using the Performance Indicators Recording Form]
- Final employer endorsement of occupational and professional competence and overall completion of the apprenticeship.

Contact information

For further information, please call our Business Relations Team on 01872 242711 or email apprenticeships@truro-penwith.ac.uk

* A guide to GCSE grading and Functional Skills



Department for Education

GCSE Grading	
New Grading Structure	Old Grading Structure
9	A*
8	
7	A
6	B
5	
Standard Pass → 4	C
3	D
2	E
1	F
	G
U	U

Functional Skills are equivalent to GCSE's, the table below shows the comparison

Entry Level 1	GCSE below G or Level 1
Level 1	GCSE D-G or level 1-3
Level 2	GCSE A* - C or level 4-9