

National Apprenticeship - Occupational Profile

Craft Occupation

Toolmaking

Industry Served

Engineering, manufacturing, pharmaceutical, food processing, petro-chemical, armed forces

Profile of Craft

A toolmaker is a skilled worker who produces and maintains precision tools used in the production of metal, plastic and other materials of all shapes and sizes. The work of a toolmaker involves interpreting drawings and technical data to machine and assemble with great accuracy jigs, fixtures, moulding tools, dies and punches.

Care and attention to detail and high precision are the hallmark of Toolmaking. The use of lathe, milling machine, drilling and spark erosion equipment are the key skills as are the use of precision, marking out and measuring tools.

At the end of the apprenticeship the Craftsperson will be able to demonstrate competence in the following:

Core Skills

- Reading and applying technical documentation
 - Determining work stages, tools and methods
 - Marking out workpieces using various measuring equipment
 - Making and repairing cutting and punching tools/fittings, jigs, fixtures and dies/fittings
 - Fitting and assembling the necessary parts
 - Using appropriate hand tools and machine tools
 - Checking the work performed using appropriate measuring equipment
 - Servicing and maintaining relevant equipment
 - Manufacturing components by hand Machining (turning, milling, grinding, boring) and fabricating
 - Collecting technical data on work processes and results
-

Specialist Skills

- CNC machining
 - CAD/CAM
 - EDM
 - Wire erosion
 - Polishing
 - Coordinate measuring machines
 - Surface texture assessment
-

Common Skills

Workshop practice including - safe use/maintenance of tools and equipment, marking out, drilling, tapping, reaming and fastenings.

Engineering drawings including understanding 1st and 3rd angle projection, isometric, oblique and freehand drawings/symbols

Safety: Hazard avoidance, good workshop practices, basic first aid, fire extinguishers, pattern development, materials, manual and mechanical handling, light fabrication, environmental protection and rational use of energy.

Personal Skills

The skills which apply to all trades and incorporate the practical application of abilities such as:

- Communications
- Customer relations
- Adaptability
- Ability to work as a team member
- Ability to work independently
- Initiative
- Problem solving
- Planning
- Information gathering
- Quality
- Language
- Report writing

Mastery of these skills enables craftworkers to enrich their relationships with their colleagues and clients and is essential for progression to higher levels of responsibility, promotion and job satisfaction.

NOTE: Integrated curriculum includes maths, science and theory
