



TOOLMAKER AND TOOL AND DIE MAINTENANCE TECHNICIAN APPRENTICESHIP

**Level:**

3

Duration:

Up to 4 years

Entry requirements:

A minimum of four GCSEs at grade C (4) or above including English, Maths, Science and Technology is desirable.
Other equivalent qualifications are acceptable.

Overview:

Toolmakers and Tool & Die Maintenance Technicians are predominantly involved in the highly skilled, complex and specialist detailed work of manufacturing and maintaining the engineering tooling used to produce components, products and assemblies. These products, assemblies and systems affect all of our daily lives, whether it be for travel such as (cars, planes, boats and rail) energy, defence, food, clothing, packaging and health including medical equipment, devices and implants such as joint replacements. This requires the application of a broad range of activities including the interpretation of Engineering drawings and technical instructions and the use of hand, machine and automated computer controlled machine tools and measuring equipment. Technicians must comply with applicable legislation and organisational safety requirements and be expected to work both individually and as part of a manufacturing team, working with minimum supervision, taking responsibility for the quality and accuracy of the work they undertake. They will be proactive in finding solutions to problems and identifying ways to improve the business. They will be expected to test and adjust the systems they have built or maintained ensuring tooling, jigs, fixtures and assemblies meet the required specification. This requires the application of a broad range of skills, knowledge and occupational behaviours across a range of engineering disciplines.





Aim:

- Level 3 Diploma in Advanced Manufacturing Engineering (Development Competence) – Toolmaker, Tool and Die Maintenance
- Level 3 Diploma or Extended Diploma in Advanced Manufacturing Engineering (Development Knowledge)

Where Can I Study?

Training 2000 Blackburn

Year 1 – full time at Training 2000 OR x6 four week blocks

Year 2 – 1 day per week

Year 3-4 – assessment in your workplace

Any other useful Information:

Specific Specialist Knowledge:

- understand mathematical techniques, formula and calculations in a Toolmaking environment
- understand the structure, properties and characteristics of common materials used for the manufacture and repair of tooling, Moulds, Dies and jigs and fixtures
- understand the safe operation, correct selection and the application of a range of hand tools used for toolmaking and die maintenance, including grinders, drills, stones etc.
- understand the safe operation and operating principles of a range of complex and often state of the art workshop machinery (such as CNC lathes, milling, grinding and erosion machining centres, drilling and welding equipment)
- understand how to set up and operate the machinery/equipment efficiently and effectively
- understand the principles of how the relevant tools, dies, jigs and fixtures being manufactured/maintained function, the operating sequences, the purpose of individual components/systems and how they interact
- Understand the application of pneumatics, hydraulics, electrical and electronic systems as applied to various moulding, injection, pressing and similar associated machinery.

Specific Specialist Skills:

- read and interpret relevant data and documentation used to produce and/or maintain tool and die components, assemblies and systems
- apply methods and techniques to produce, assemble, disassemble repair and/or maintain tools, dies, jigs and fixtures as applicable to the employer requirements
- manufacture components (such as tooling, dies, jigs and fixtures)
- undertake testing to confirm correct operation, and of the effectiveness of repairs and maintenance activities carried out
- undertake equipment/asset care and/or Preventative Planned Maintenance processes and procedures
- Carry out complex fault diagnosis and repair activities covering the following technologies as applicable to the tool, die, jig and fixture environment:
 - Maintaining mechanical equipment
 - Maintaining fluid & pneumatic power equipment
 - Maintaining electrical & electronic equipment
 - Maintaining process control equipment
- contribute to the business by identifying possible opportunities for improving working practices, processes and/or procedures

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