

National Apprenticeship - Occupational Profile

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| Craft Occupation | Mechanical Automation and Maintenance Fitting |
| Industry Served | Engineering, manufacturing, pharmaceutical, quarries and mines, food processing, local authorities, petrochemical, armed forces. |
| Profile of Craft | <p>The Fitter's job concerns plant and machinery installation, maintenance and repairs, replacement of broken or work parts, adjustment, servicing and checking components, machinery and equipment, component replacement. Parts may have to be fabricated using machine tools i.e. lathes, milling machines, grinders etc., components may have to be repaired or fabricated using welding, brazing, rivetting, soldering etc. Increasingly machines and processes involve integration with computer and electronic operating and control systems with mechanic/hydraulic and pneumatic devices i.e. PLCs, CNC, CAD, CIM and CAM.</p> <p>At the end of the apprenticeship, the craftsman will be able to demonstrate competence in the following skills:</p> |
| Core Skills | <ul style="list-style-type: none">• Installation, service, maintenance, fault rectification of process plant, machine tools, power and production equipment• Component fabrication by Turning, Milling, Welding, Cutting, Machining, Drilling, Reaming and Pipe Fabrication• Machine setting/adjustment of control system elements, including computerisation and system programming |
| Specialist Skills | <ul style="list-style-type: none">• Precision turning• Advanced milling• Coded welding• CNC machining/programming• CAM, CAD• Hydraulics• Pneumatics• Electronics |
| Common Skills | <p>Workshop practice including: safe use and maintenance of tools and equipment, marking out, drilling, tapping, reaming, rivetting, fasteners, technical drawings and interpretation of 1st and 3rd angle, isometric, oblique and freehand drawings/symbols.</p> <p>Safety - hazard avoidance, good workshop practices, basic first aid, fire extinguishers, electrical shocks, lifting, evacuation, basic thermal processes, pattern development, materials, mechanical, handling light fabrication, environmental protection and rational use of energy.</p> |
| Personal Skills | <ul style="list-style-type: none">• Initiative/adaptability• Verbal communication• Problem solving• Teamwork• Planning• Report writing |

NOTE: Integrated curriculum includes maths, science and theory

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