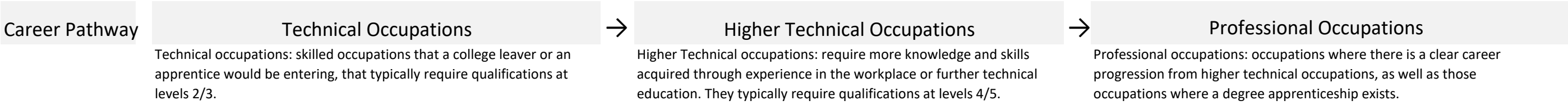


# Occupational Map: Engineering and Manufacturing

This is one of 15 occupational maps that group together occupations that require similar knowledge skills and behaviours. Career pathways and occupational clusters have been used to provide further grouping of occupations, with the pathways indicating options for likely career progression. Every apprenticeship standard has been captured, as well as other skilled occupations where there is a substantial requirement for technical knowledge and practical skills. This is currently the largest occupational map and is split into three pathways: engineering, design, development and control; engineering, manufacturing and process; and maintenance, installation and repair. The manufacturing operative, print and packaging operative/technician and manufacturing/process maintenance operative/technician clusters have been identified as suitable for learning via apprenticeships only, so Government does not intend to launch T levels for these.

**Occupations in green:** apprenticeship ready for delivery  
**Occupations in amber:** apprenticeship standard approved, assessment plan in development  
**Occupations in red:** apprenticeship in development  
**Occupations in black:** there is no apprenticeship in development  
( ): the number shown in brackets is the level of the apprenticeship (if the level is known)



Click here for more information on the occupations listed in this map			
Engineering, Design, Development and Control	<div>Cluster: Design and Development Technician</div> <div>Design and develop parts of product and/or process technologies.</div>	<div>Cluster: Design and Development Technical Manager</div> <div>Design and develop whole product and/or process technologies using a specific discipline or technology or application expertise.</div>	<div>Cluster: Design and Development Engineer</div> <div>Design and develop a range of products and/or process technologies using discipline and applications specific expertise.</div>
	<div>Engineering design and draughtsperson (3):</div> <div>- Control and instrumentation</div> <div>- Electrical</div> <div>- Mechanical</div> <div>- Piping</div> <div>- Structural</div>	<div>Applications engineer</div> <div>Electrical power networks engineer (4): Design engineer</div> <div>- Asset management</div> <div>- Control</div> <div>- Design</div> <div>- Operational delivery</div> <div>- Planning</div>	<div>Aerospace engineer (degree) (6)</div> <div>Aerospace software development engineer (degree) (6)</div> <div>Chemical engineer</div> <div>Electronic Systems Principal Engineer (7)</div> <div>Embedded electronic design and development engineer (degree) (6)</div> <div>Mechanical engineer</div> <div>Medical device/medical engineer</div> <div>Post graduate engineer (7):</div> <div>Power engineer (degree) (7):</div> <div>- Control and instrumentation</div> <div>- Electrical</div> <div>- Mechanical</div> <div>- Power transmission and distribution</div>
	<div>Marine engineer (3)</div> <div>Process development technician</div>	<div>Product development manager</div> <div>Senior CAD engineer</div> <div>Technical coordinator</div>	<div>Product design and development engineer (degree) (6)</div>
			<div>Simulation and Modelling Engineer</div> <div>Systems engineer (masters level) (7)</div> <div>Materials science and technology professional (6)</div>

	<b>Cluster: Quality Improvement and Project Control Technician</b> <i>Maintain and improve product and process integrity and quality, production and process efficiency, and the overall health and safety of the working environment.</i>	<b>Cluster: Quality Improvement and Project Control Manager</b> <i>Maintain and improve the integrity and quality of complex products and processes, improve whole production and process technologies, and the overall health and safety of the working environment.</i>	<b>Cluster: Quality Improvement, Health &amp; Safety Professional</b> <i>Direct and manage overall product and process integrity and quality, and the health and safety of a whole workplace.</i>
	<b>Engineering technician (3):</b> <ul style="list-style-type: none"><li>- Aerospace and aviation</li><li>- Maritime defence</li><li>- Sector wide advanced manufacturing &amp; engineering</li></ul> <b>Lean Manufacturing Operative (2)</b> <b>Non-destructive testing engineering technician (3)</b> <b>Non-destructive testing (NDT) operator (2)</b> <b>Nuclear health physics monitor (2)</b> <b>Project controls technician (3)</b>	<b>Electrical power networks engineer (4):</b> <ul style="list-style-type: none"><li>- Asset management engineer</li><li>- Control engineer</li><li>- Design engineer</li><li>- Electrical project engineer</li><li>- Operational delivery engineer</li><li>- Planning engineer</li></ul> <b>Safety engineer</b> <b>Supplier assurance manager</b> <b>Quality manager</b>	<b>Compliance director</b> <b>Lean manufacturing (6/7)</b> <b>Non-destructive testing engineer (degree) (6)</b> <b>Risk and safety management professional (degree) (7)</b>

Engineering, Manufacturing and Process	<b>Cluster: Fabrication and Welding Operative/Technician</b> <i>Make products and plant by cutting, forming, jointing and shaping of materials.</i>	<b>Cluster: Fabrication and Welding Technologist</b> <i>detail to be added.</i>	
	<b>Engineering construction pipefitter (3)</b> <b>Fabricator (3)</b> <b>Structural Steelwork Fabricator (2)</b> <b>Welding (2)</b> <b>Welding (3)</b>	<b>Fabrication technologist</b> <b>Welding technologist</b>	
	<b>Cluster: Manufacturing and Process Operative/Technician</b> <i>Assemble and construct complex engineering products.</i>		<b>Cluster: Manufacturing Engineer</b> <i>Introduce complex technologies into the manufacturing environment and improve manufacturing technologies.</i>
	<b>Advanced manufacturing fitter (3)</b> <b>Boat builder (3)</b> <b>Composites technician (3)</b> <b>Electrical Maintenance</b> <b>Furniture manufacturer (2)</b> <ul style="list-style-type: none"><li>- Bed manufacturer</li><li>- Fitted furniture installer</li><li>- Foam converter and upholstery cushion interior manufacturer</li><li>- Furniture CNC specialist</li><li>- Furniture finisher</li><li>- Furniture restorer</li><li>- General furniture manufacturer,</li><li>- Modern furniture service repairer</li><li>- Modern upholsterer</li><li>- Wood machinist</li></ul> <b>Heritage engineering technician (3)</b> <b>Wood product manufacturing (3)</b>		<b>Manufacturing engineer (degree) (6)</b> <b>Manufacturing manager (degree) (6)</b> <ul style="list-style-type: none"><li>- Food and drink</li></ul> <b>Ordnance, munitions and explosives (OME) professional (degree) (6)</b>

<b>Cluster: Plant Operative/Technician</b> <i>Operate plant and equipment for a part/sub process.</i>
<b>Mineral and construction product sampling and testing operations (2)</b> Mineral processing mobile and static plant operator (2) Mineral processing weighbridge operator (2) <b>Mineral processing general site operative</b> <b>Nuclear operative (2)</b> <ul style="list-style-type: none"> <li>- Nuclear decommissioning operative</li> <li>- Nuclear process operative</li> </ul>

<b>Cluster: Food and Science Manufacturing Operative/</b> <i>Operate semi-automated and automated plant and equipment to equipment to manufacture food and chemical products.</i>
Abattoir worker (2) Advanced baker (3) Food and drink process operator (2) Food and drink advanced process operator (3) Science industry manufacturing technician (3) Science manufacturing process operative (2)

<b>Cluster: Manufacturing Operative</b> <b>APPRENTICESHIP ONLY</b> <i>Routine assembly of manufactured products</i>
<b>Castings, foundry and patternmaking operative (2)</b> <b>Castings, foundry and patternmaking technician (3)</b> <b>Footwear manufacturer (2)</b> <b>Garment/production technologist</b> <b>Glass manufacturing operator (3)</b> <ul style="list-style-type: none"> <li>- Batch and furnace operator</li> <li>- Flat glass process operator</li> <li>- Hot end machine operator</li> </ul> <b>Lean manufacturing operative (2)</b> <b>Pattern Cutter</b> <b>Sewing Machinist</b> Textile Care Operative (2) Textile manufacturing operative (2)

<b>Cluster: Print and Packaging Operative/Technician</b>
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<b>Cluster: Manufacturing, Plant and Process Technologist</b> <i>Develop and improve technology of the manufacturing plant and equipment for a whole process.</i>
Advanced dairy technologist (5) <b>Brewer (4)</b> Engineering services manager <b>Mineral Products Technician (5)</b> Nuclear welding inspection technician (NWIT) (4)ⓘ Nuclear technician (5)ⓘ Process development technician <b>Specialist textile technician (4)</b> Technical service manager

<b>Cluster: Print and Packaging Technologist</b>
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<b>Cluster: Plant and Process Engineer</b> <i>Develop and improve the operation and development of whole manufacturing processes and systems and enable them to operate safely and efficiently.</i>
Nuclear scientist and nuclear engineer (integrated degree) (6) Process automation engineer (degree) (7) Science industry process / plant engineer (degree) (6)

<b>Cluster: Print and Packaging Engineer</b>
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	<b>APPRENTICESHIP ONLY</b> <i>Operate complex manufacture of printed matter and packaged goods.</i>	<i>Develop and apply new and improve existing technologies for print and packaging manufacturing.</i>	
	<b>Packaging technician</b> <b>Papermaker (3)</b> <b>Print technician (3)</b> <ul style="list-style-type: none"><li>- Pre-press technician</li><li>- Press technician</li><li>- Post-press technician</li></ul>	<b>Packaging technologist</b>	
			<b>Packaging professional (degree) (6)</b>

<b>Maintenance</b> <b>Installation and Repair</b>	<b>Cluster: Service, Repair and/or Overhaul Operative/ Technician</b> <i>Install, maintain and service plant and equipment.</i>	<b>Cluster: Installation, Service, Repair and/or Overhaul Advanced Technician</b> <i>Install, maintain and service plant and equipment using application and/or context specific expertise.</i>	<b>Cluster: Installation and Service Engineer</b> <i>Build and install plant and equipment using application and/or context specific expertise.</i>
	<b>Accident repair technician (3)</b> <b>Autocare technician (2)</b> <b>Automotive glazing technician (3)</b> <b>Aviation maintenance mechanic (military) (2)</b> <b>Bus and coach engineering technician (3):</b> <ul style="list-style-type: none"><li>- Mechanical</li><li>- Electrical</li><li>- Coach builder</li><li>- Mechanic</li></ul> <b>Cycle mechanic (2)</b> <b>Engineering Operative (2)</b> <ul style="list-style-type: none"><li>- Electrical and electronic</li><li>- Fabrication</li><li>- Maintenance</li><li>- Materials, processing and finishing</li><li>- Mechanical manufacturing</li><li>- Technical support</li></ul> <b>Fork lift truck technician (3)</b> <b>Heavy vehicle service and maintenance technician (3)</b> <b>Leisure &amp; entertainment engineering technician (3)</b> <b>Lift / Escalator electromechanic (3):</b> <ul style="list-style-type: none"><li>- Escalator and moving walk installation</li><li>- Escalator and moving walk service and repair</li><li>- Lift installation</li><li>- Lift service and repair</li></ul> <b>Maritime Electrical / Mechanical Mechanic (2)</b> <b>Motor vehicle service and maintenance technician (light vehicle) (3)</b> <ul style="list-style-type: none"><li>- Caravan, trailer and motor home technician</li></ul> <b>Motorcycle technician (repair and maintenance) (3)</b> <b>Propulsion technician (4)</b> <b>Powered pedestrian door installer and service engineer (2)</b> <b>Rail engineering operative (2)</b>	<b>Aircraft maintenance certifying engineer (4)☒</b> <b>Automotive problem solving senior technician</b> <b>Chief engineer (shipping)</b> <b>High speed rail and infrastructure technician (4):</b> <ul style="list-style-type: none"><li>- Civil engineering</li><li>- Command control and communications</li><li>- Operations</li><li>- Power</li><li>- Rolling stock</li><li>- Systems engineering</li><li>- Track</li></ul> <b>Rail &amp; rail systems engineer (5)</b> <b>Rail engineering advanced technician (4)</b> <b>Road transport engineering manager (4)</b> <b>Vehicle damage assessor (4)</b>	<b>Electronic Engineer (6)</b> <b>Rail &amp; rail systems principal engineer (degree) (7)</b> <b>Rail &amp; rail systems senior engineer (degree) (6)</b> <b>Planning and commissioning director</b> <b>Telecommunications Engineer</b>

Rail engineering technician (3)  
Specialist tyre operative (2)  
Stair lift, platform lift, service lift electro mechanic (2)  
Survival equipment fitter (military) (3)  
Vehicle damage mechanical, electrical and trim (MET) technician (3)  
Vehicle damage paint technician (3)  
Vehicle damage panel technician (3)

**Manufacturing/Process Maintenance Operative/Technician APPRENTICESHIP ONLY** *Maintain and repair production and process plant and equipment in manufacturing.*

**Food and drink maintenance engineer (3):**  
- Mechanical maintenance  
- Multi-skilled maintenance  
**Gas network craftsperson (3):**  
- Emergency response  
- Network maintenance (electrical & instrumentation)  
- Network maintenance (pressure management)  
**Gas network team leader (2):**  
- Main laying  
- Service laying  
**Maintenance & operations engineering technician (3):**  
- Control & instrumentation  
- Electrical  
- Electrical system and process control  
- Electromechanical  
- Mechanical  
- Plant operations  
- Wind Turbine  
**Power network craftsperson (3):**  
- Overhead lines  
- Substation fitting  
- Underground cables  
**Science industry maintenance technician (3)**  
**Utilities engineering technician (3):**  
- Electrical  
- Instrumentation control & automation  
- Mechanical  
**Water process technician (3):**  
- Waste Water - Sewerage network technician  
- Waste Water - Treatment technician  
- Water Distribution - Leakage technician  
- Water Distribution - Network technician  
- Water Treatment - Process technician  
Water treatment operative (2)  
Water treatment technician (3)

**Manufacturing/Process Maintenance Advanced Technician**  
*Test and commission power generation, transmission and distribution plant to confirm the successful installation and operation of new and refurbished plant and equipment to prescribed specifications.*

**Electrical power protection and plant commissioning engineer (4):**  
- Plant  
- Protection

**Manufacturing/Process Maintenance Engineer**  
*Improve and develop manufacturing and engineering systems.*

**Control/technical support engineer (degree) (6)**  
**Electrical/electronic technical support engineer (degree) (6)**  
**Food and drink advanced engineer (Degree) (6)**  
- Automation  
- Mechanical  
- Production

- Equipment technician
- Legionella risk assessor
- Operations supervisor
- Treatment Technician