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# ECITB Definitions

**Apprentice** – applies to a vocational program consisting of theory and practical skills which leads to full occupational competence in the given discipline. The program must contain at least 20% off the job training which is generally delivered in a college or training centre and is then consolidated and further developed at the work place. For clarity only level 3 programs relating to core ECI occupations have been included in this document although other levels are available from level 2 through to level 7 dependent upon the occupation in question.

The legacy Apprentice frameworks are gradually being replaced by new Apprentice standards which, unlike legacy frameworks may or may not contain mandated knowledge and vocational qualifications and consist of an on programme element (off the job training and workplace development) and an holistic end point assessment phase. More information on what constitutes an Apprentice standard, which Apprentice standards are available, their allocated funding along with other general information can be found on the Institute for Apprenticeships website: https://www.instituteforapprenticeships.org/trailblazers/

**Upskilling** – a training route to upskill new industry entrants or existing semi-skill staff, give additional skills to staff or act as a transition route for individuals from different industries allowing them to gain engineering construction skills and qualifications.

**New entrant** – non apprenticeship route to gaining new skills and qualifications.

**Reskill** – A training route for existing **crafts persons** from other industries enabling them to transition into the engineering construction industry and develop their skills to match engineering construction skill requirements. The training would typically be 80 per cent practical and 20 per cent knowledge including all health and safety practices.

**Reengineer** - A training route for existing **technicians** from other industries or ex forces transitioning their skills to match engineering construction skill requirements. The training would typically be 80 per cent practical and 20 per cent knowledge including all health and safety practices.

# ECI Pipefitter

**Overview**

The occupation of a pipe fitter consists of the positioning, assembly, fabrication, maintenance and repairs of piping systems. Engineering construction industry piping systems may carry water, steam, chemicals or fuel which may be used in cooling, heating, lubricating and other processes. The piping can vary in bore and material type dependent upon the fluid it is designed to carry and the operating pressures of these systems. These system requirements also determine the method of jointing required within the piping system and the pipe fitter must ensure the integrity of joints that are made. Methods of jointing can range from threaded, bolted and clamped solutions to, where required, a more permanent welded joint. Loss of the transmission fluid through poor jointing may result in machinery and equipment failure or greater environmental damage. In the offshore industry the pipefitter is often required to have additional training in other skills such as lifting and slinging activities.

**Apprenticeship standard level 3** - <https://www.instituteforapprenticeships.org/apprenticeship-standards/engineering-construction-pipefitter/>

Installing Engineering Construction Plant and Systems - Pipefitting at SCQF Level 6

**Vocational qualifications:-**

Level 2 - <https://www.ecitb.org.uk/wp-content/uploads/2019/01/QS-Level-2-Diploma-in-SIPS-RQF-RV-1-0-1.pdf>

Level 3 -<https://www.ecitb.org.uk/wp-content/uploads/2019/01/QS-Engineering-Construction-Installing-Plant-and-Systems-RV-2-0.pdf>

Scottish level 5 - <http://www.ecitb.org.uk/wp-content/uploads/2019/01/ECITB-Diploma-in-Supporting-the-Installation-of-EC-Plant-_-Pipefitting-at-SCQF-Level-5.pdf>

Scottish level 6 - <http://www.ecitb.org.uk/wp-content/uploads/2019/01/ECITB-Diploma-in-Supporting-the-Installation-of-EC-Plant-_-Pipefitting-at-SCQF-Level-6.pdf>

# ECI Plater

**Overview**

Platers within the engineering construction industry prepare steel and other metal plates and sections for the manufacture, repair and maintenance of storage tanks, vessels and the other structures contained within oil rigs, powers stations, chemical plants and refineries. It is widely accepted that platers work on sheet materials having a thickness greater than 3mm. The plater’s work can also cover the production of the structural steelwork used in the construction of bridges, buildings and oil platforms. To achieve these tasks platers are skilled in the reading of engineering drawings, measuring and marking out, cutting, forming and joining of metal plate and structural steel of varying thickness and size. They may then be responsible for the assembly of manufactured items and the use of lifting equipment before securing it usually using tack welding. Through the course of these functions the plater will need to utilise a range of machinery such as heavy duty guillotines, oxyacetylene flame cutters, CNC computer controlled and hand controlled machines, rollers and presses in addition to the more traditional hand skills and tools associated with metal craft work.

**Apprenticeship standard level 3**- <https://www.instituteforapprenticeships.org/apprenticeship-standards/plate-welder/>

Fabricating - Engineering Construction Steel Structures - Plating at SCQF Level 7

**Vocational qualifications:-**

Level 2 - <https://www.ecitb.org.uk/wp-content/uploads/2019/01/QS-Level-2-Diploma-in-SIPS-RQF-RV-1-0-1.pdf>

Level 3 - <https://www.ecitb.org.uk/wp-content/uploads/2019/01/QS-Engineering-Construction-Installing-Plant-and-Systems-RV-2-0.pdf>

# ECI Steel Erector

**Overview**

The occupation of steel erector consists of the installation of prefabricated steel and components that make up the framework of industrial installations, buildings and other structures. Steel erectors assemble the steelwork which in most cases constitutes the core of the building or structure. They must be able to interpret engineering drawings to determine how to erect the steelwork structure. As the height increases they rely upon equipment such as elevated platforms, scissor lifts and various types of cranes to erect, align and fix the steel sections and components. As steel erectors work above the other onsite tradespeople they may be responsible for fixing the edge protection as they reach new levels.

**Apprenticeship standards:-**

Structural Steel Fabricator level 2 - <https://www.instituteforapprenticeships.org/apprenticeship-standards/structural-steelwork-fabricator/>

Structural Steel Erector level 2 - <https://www.instituteforapprenticeships.org/apprenticeship-standards/structural-steelwork-erector/>

Erecting - Engineering Construction Capital Plant Steel Structures at SCQF Level 6

**Vocational qualifications:-**

Level 2: <https://www.ecitb.org.uk/wp-content/uploads/2019/01/QS-Level-2-Diploma-in-Erecting-Steelwork-Components-RQF-RV-1-0.pdf>

Level 3: <https://www.ecitb.org.uk/wp-content/uploads/2019/01/QS-LiftingPositioning-and-Installing-StructuresPlant-and-Equipment-RV-1-0-1.pdf>

ECI Rigger

**Overview**

The occupation of rigging in the engineering construction industry (ECI) refers to the lifting, moving and positioning of extremely large or heavy objects which are beyond the reasonable scope of manual handling and outside the reach of material handling equipment. Due to the specialised and dangerous nature of the work involved, the profession of rigger requires extensive training both at a dedicated instructional centre and then through a period of consolidation in a workplace environment. The complexity of many rigging operations necessitates the need for teams of riggers to work cohesively in order to successfully and safely complete moving load activities. Given the hazardous nature of operations, participants in rigging teams place significant trust in their colleagues. This requires all riggers to maintain a high level of knowledge and competency to ensure that operations are professionally and safely carried out. The role of a rigger in the ECI should not be confused with that in other industries. The term ‘rigger’ is used in the civil construction and entertainment industries to describe a role that is primarily concerned with the rigging of access equipment and rope suspension systems as well as lighting rigs.

**Apprenticeship standard level 3 -** <https://www.instituteforapprenticeships.org/apprenticeship-standards/engineering-construction-erector-rigger/>

**Vocational qualifications:-**

Level 2: <https://www.ecitb.org.uk/wp-content/uploads/2019/01/QS-Level-2-Diploma-in-LPECL-RQF-RV1.pdf>

Level 3: <https://www.ecitb.org.uk/wp-content/uploads/2019/01/QS-LiftingPositioning-and-Installing-StructuresPlant-and-Equipment-RV-1-0-1.pdf>

Scottish level 6 - <http://www.ecitb.org.uk/wp-content/uploads/2019/01/Diploma-in-Moving-Engineering-Construction-Loads-at-SCQF-level-6.pdf>

# ECI Welder

**Overview**

The occupation of welder within the engineering construction industry is concerned with the joining together of metal components and assemblies in either pipe or plate form, and sometimes thermoplastics, using extreme heat generated by electric welding equipment to melt the metal causing coalescence. Welders are required to read and interpret welding specifications in order to establish the correct process to be used, select the correct material and welding equipment and the required preparation of the material for welding. The welding process may be performed manually or may be performed by specialist equipment as an automated or mechanised process. Each welding operation carries a varying level of complexity which demands a great deal of skill, focus and competent technique from the welder to ensure that the fusion of materials meets the strict tolerances and quality standards required.

**Apprenticeship standards:-**

General Welder (Arc Processes) level 2 **-** <https://www.instituteforapprenticeships.org/apprenticeship-standards/general-welder-arc-processes/>

Plate Welder level 3 - <https://www.instituteforapprenticeships.org/apprenticeship-standards/plate-welder/>

Pipe Welder level 3 - <https://www.instituteforapprenticeships.org/apprenticeship-standards/pipe-welder/>

Welding - Engineering Construction Pipework at SCQF Level 7

Welding - Engineering Construction Plate at SCQF Level 7

# Nuclear welding inspection technician

**Overview**

(NWIT) performs a quality control and welding inspection role for the nuclear industry. ... They need to be able to work with minimum supervision, in a professional manner, taking responsibility for the quality and accuracy of the work they undertake.

**Apprenticeship standard level 4** -<https://www.instituteforapprenticeships.org/apprenticeship-standards/nuclear-welding-inspection-technician/>

# ECI Mechanical Fitter

**Overview**

The occupation of mechanical fitter within the engineering construction industry is concerned with the assembly, installation, maintenance, testing and dismantling of often complex machinery and mechanisms. Typical equipment encountered within the occupation includes: engines, pumps, transmission systems, power transmission systems, turbines, hydraulic and pneumatic actuators and systems. Working to precise tolerances, the activities performed, require a high degree of skill to ensure that the specifications within design drawings are achieved. Through their wide range of duties mechanical fitters assume a through life responsibility for the machinery, systems and equipment within their charge, from the initial assembly, installation and setting up to the maintenance and testing to the eventual disassembly/decommissioning of the equipment.

**Apprenticeship standard level 3** -<https://www.instituteforapprenticeships.org/apprenticeship-standards/engineering-fitter/>

Installing Engineering Construction Plant and Systems - Mechanical Fitting at SCQF Level 6

**Vocational qualifications:-**

Level 2 - <https://www.ecitb.org.uk/wp-content/uploads/2019/01/QS-Level-2-Diploma-in-SIPS-RQF-RV-1-0-1.pdf>

Level 3 - <https://www.ecitb.org.uk/wp-content/uploads/2019/01/QS-Engineering-Construction-Installing-Plant-and-Systems-RV-2-0.pdf>

# ECI Mechanical Maintenance Technician

**Overview**

Mechanical maintenance technicians within the engineering construction industry are concerned with the fault diagnosis, routine servicing, repair and maintenance of complex plant, machinery and associated components and on occasions to install machinery used within their areas. Mechanical maintenance technicians are more commonly found performing preventative maintenance which is the process of carrying out systematic, planned maintenance of machinery and equipment. This enables the technician to identify and resolve potential problems before they can result in a much larger or catastrophic failure. In addition to the preventative maintenance the maintenance technician is also required to perform non-scheduled maintenance as a result of a machinery or equipment failure. In these circumstances the technician must diagnose and resolve problems quickly and where necessary scheming a temporary repair until such time that a permanent solution can be carried out.

**Apprenticeship standard level 3** - <https://www.instituteforapprenticeships.org/apprenticeship-standards/maintenance-and-operations-engineering-technician/>

**Vocational qualifications: - Level 3** - <https://www.ecitb.org.uk/wp-content/uploads/2019/01/QS-Engineering-Construction-Maintenance-RV-1-1-5.pdf>

**Scottish level 7** - <http://www.ecitb.org.uk/wp-content/uploads/2019/01/Diploma-in-Maintaining-EC-Plant-and-Systems-Mechanical-at-SCQF-level-7.pdf>

# ECI Electrical Installation (Fitter)

**Overview**

The occupation of electrical fitter involves the installation, commissioning, inspection, testing and fault diagnosis of electrical plant and its associated cabling and equipment. Commonly this involves types of equipment such as electrical distribution systems, generators, electric motors, heating, ventilation and air-conditioning systems. To achieve these functions the electrical fitter must be able to interpret technical specifications and drawings and where necessary demonstrate effective reasoning skills in the resolution of faults and problems. Additionally electrical fitters use traditional hand tools and test equipment.

**Apprenticeship standard level 3** - <https://www.instituteforapprenticeships.org/apprenticeship-standards/engineering-fitter/>

Installing Engineering Construction Plant and Systems - Electrical at SCQF Level 7

**Vocational qualification level 3** - <https://www.ecitb.org.uk/wp-content/uploads/2019/01/QS-Engineering-Construction-Installing-Plant-and-Systems-RV-2-0.pdf>

# ECI Electrical Maintenance Technician

**Overview**

Electrical maintenance technicians are responsible for the assembly, installation, maintenance and testing of a wide range of electrical plant and associated components. Typical equipment includes power generation and distribution systems, switch panels, transformers, motors and generators. Electrical technicians are expected to be able to diagnose the causes of electrical or electromechanical malfunctions or failures of operational equipment in a prompt and efficient manner. They must be able to interpret maintenance specifications, engineering drawings and wiring diagrams to achieve many of their day to day objectives.

**Apprenticeship standard level 3** - <https://www.instituteforapprenticeships.org/apprenticeship-standards/maintenance-and-operations-engineering-technician/>

**Vocational qualifications:-**

Level 3 - <https://www.ecitb.org.uk/wp-content/uploads/2019/01/QS-Engineering-Construction-Maintenance-RV-1-1-5.pdf>

Scottish level 7 - <http://www.ecitb.org.uk/wp-content/uploads/2019/01/Diploma-in-Maintaining-EC-Plant-and-Systems-Electrical-at-SCQF-level-7.pdf>

# ECI Instrument & Controls Technician

**Overview**

This occupation is found in cross sectors such as; Food & Drink, Oil & Gas and Pharmaceutical companies who are involved in manufacturing process, logistics or utilities, These employers may be directly involved in these activities or as a provider of services for example; system integration, field service, technical consultancy to these companies. A fully competent Automation & Control Engineering Technician will be able to install, maintain, fault find and optimise hardware and software for automation systems.

**Apprentice standards level 4** -https://www.instituteforapprenticeships.org/apprenticeship-standards/automation-and-controls-engineering-technician/

**Vocational qualifications:-**

Level 3 - <https://www.ecitb.org.uk/wp-content/uploads/2019/01/QS-Engineering-Construction-Maintenance-RV-1-1-5.pdf>

**Scottish level 7** - <http://www.ecitb.org.uk/wp-content/uploads/2019/01/Diploma-in-Maintaining-ECPS-Instrument-and-Controls-at-SCQF-level-7.pdf>

# ECITB Design & Draughting

**Overview**

Engineering design and draughting technicians produce designs and drawings for structures, piping, electrical systems, control and instrumentation systems and mechanical components used in industrial and commercial construction. Typically, jobholders work in a wide range of industries of national importance including power (coal, gas, nuclear, wind and other renewables), infrastructure (water, road, rail), petrochemical, oil and gas, steel, food and drink processing and manufacturing (aerospace, maritime, vehicle).

Apprenticeship Standard Level 3 - <https://www.instituteforapprenticeships.org/apprenticeship-standards/engineering-design-and-draughtsperson/>

Engineering Construction Design and Draughting at SCQF Level 6

**Vocational qualifications:-**

Level 3 - <https://www.ecitb.org.uk/wp-content/uploads/2019/01/QS-Engineering-Design-and-Draughting-RV1-0-2.pdf>

Scottish level 6 - <http://www.ecitb.org.uk/wp-content/uploads/2019/01/Diploma-in-Engineering-Construction-Design-and-Draughting-at-SCQF-level-6.pdf>

Moving Engineering Construction Loads at SCQF Level 6

ECITB Project Control Programmes (For further detail see brochure)

* Introduction to project controls
* Estimating Methodology & Practice
* Managing risk as part of a project team
* Project documents manager’s course
* Certificate in project controls
* Project controls technician standard (Apprenticeship)
* Project Controls – Practice & techniques (Qualifications)
* ECITB Training Standards: Project Controls, Estimating, Planning and Cost Engineering

Apprenticeship - Project Controls Technician controls, monitors and systematically analyses progress and performance data on engineering, manufacturing, construction and infrastructure projects. They require strong analytical skills and a practical approach to interpret technical information. They use specific, complex software tools to undertake a wide range of project controls tasks, including: identifying the right data for scrutinising progress; setting baseline targets; tracking progress and performance; forecasting trends; identifying, modelling and anticipating deviations from baseline; assessing the impact of design/construction changes; and using insight to recommend early preventative and remedial actions.

Apprenticeship Standard level 3 - <https://www.instituteforapprenticeships.org/apprenticeship-standards/project-controls-technician/>

Project Control at SCQF Level 6

**Vocational qualification level 3** - <https://www.ecitb.org.uk/wp-content/uploads/2019/01/QS-Project-Control-Techniques-RV-1-0-1.pdf>

# Charge-hand/Team Leader

**Overview**

Likely to work alongside trades people in own technical field, but sometimes taking on the responsibilities of a supervisor. The position is likely to be fixed-term and the duration of the position would be dependent on the size of the project, volume and continuity of work, with responsibility for a small or single team or in a defined section of the project (e.g. pump room)

Typical job titles: Supervisor 1; Charge-hand / Team Leader; 1st Line supervisor

# Supervisor

**Overview**

Unlikely to work alongside trades people in own technical field, but may do so if the situation demands. Likely to be ‘office-bound’ but frequently on the site resolving queries, technical issues and liaising with others. Crucial link between trade and higher supervision. The position is likely to be full time, unless the size of the project, volume and continuity of work dictates otherwise. Responsibility for a number of charge hands and teams, or a number of defined sections of the project, or a large project phase

Typical job titles: Supervisor, Foreman; General Foreman; 2nd Line Supervisor; Lead Engineer

**Apprenticeship standard level 3** - <https://www.instituteforapprenticeships.org/apprenticeship-standards/team-leader-supervisor/>

# Senior Supervisor

Likely to be predominantly office located, however on site as and when required to resolve technical, people, client and resource queries and issues. May undertake audits. Critical link between an organisation HQ and the project area. Responsible for supervisory staff across a number of trades and work areas. Provides the liaison between other parties such as: other trades, client, site engineers, unions and regulatory authorities

Typical job titles: Supervisor 3; Superintendent; Staff Supervisor; Chief Engineer; Workshop Manager; Installation Manager

**Apprenticeship standard level 5 -** <https://www.instituteforapprenticeships.org/apprenticeship-standards/operations-departmental-manager/>