

Electrical maintenance engineers, like mechanical maintenance engineers, are a key feature of every manufacturing and production business in the engineering sector. Different levels of maintenance are required to keep factories, process plants, power stations, oil and gas rigs, wind farms and utilities services operating effectively and safely. However, the specific hazards associated with electrical systems mean that this kind of work is usually carried out by highly qualified and experienced electrical engineers who need to be trained in a range of skills areas. So the role of the Electrical Maintenance Engineer can be broad, challenging and extremely dynamic.

Types of work can include the installation and maintenance of pre-installed systems and the ability to work on integrated engineering systems. Maintenance can be planned or reactive; it can involve servicing and repair or be based on essential fault diagnostic and problem solving skills. You can be working on live powered systems or, at other times, on dead circuits of components. Work can sometimes involve arduous conditions such as confined spaces or at height.

MECHANICAL ENGINEERING ELECTRICAL

What's involved?

The range of skills Apprentices develop includes:

- The theory, principles and practices behind a variety of key activities surrounding the need for preventative maintenance and dynamic problem solving, working with integrated systems
- An understanding material properties and their characteristics in electrical engineering
- Basic cable tray and conduit fabrication skills
- Use of remote Input/Output modules and the wiring and networking techniques used to facilitate a Programmable Logic Control (PLC) system
- Wiring of different site-specific assets such as level probes, pressure switches, pad switches
- Calibration and quality assured engineering principles
- Advanced electrical skills in AC and DC power supply
- Building, mounting and wiring of three phase control systems using motor control and direct online wiring systems
- Principles of quality assurance and validation of engineering data

- Reading of schematic electrical drawings
- Applying point to point testing whilst fault finding on circuits (i.e. motor control circuit faults such as an overload fault, level switch/pressure switch interlocking etc)
- Report Writing skills

What qualifications will I achieve?

Apprenticeships are available at **Intermediate, Advanced and Higher Level** and are made up of the following five elements:

- **A Competence Element**
Such as a Certificate or Diploma at Level 2, 3 or 4
- **A Knowledge Element**
Underpinning or theoretical knowledge, which will usually require attendance at college
- **Functional Skills in English, Mathematics and ICT**
At the required level, which will usually require attendance at college
- **Personal Learning and Thinking Skills**
- **Understanding Employees Rights and Responsibilities**

