

INSTALLATION ELECTRICIAN/MAINTENANCE ELECTRICIAN APPRENTICESHIP STANDARD

Standard Code ST0152
Course Level 3
Day Release
Location: Lincoln
Funding Level £18000
Duration 48mths including EPA

Course Description

Electricians install, maintain and repair electrical systems in industrial, commercial and domestic environments. Electricians might work in both indoor and outdoor settings. Electrical equipment and systems may include switchboards, motors, cables, fuses, thermal relays, fault current protection switches, heating, lighting, air conditioning and metering equipment as well as crime and fire alarm systems and renewable energy technologies. They are able to work on their own proficiently and work without immediate supervision in the most efficient and economical manner. They may contribute to the design of electrical systems. They are able to set out jobs from drawings and specifications and requisition the necessary installation materials.

Electrical safety is an important area of Electricians work. On completion of their work the electrical systems must be safe to use. They must adhere to safe working practices without endangering themselves or others. Installation Electricians work on the installation, testing, commissioning and maintenance of low voltage (less than 1000v) electrical and electronic devices and appliances.

Maintenance Electricians work on the maintenance of electrical and electronic installations including automated production systems. Duties include the supervision of the equipment, its maintenance and necessary repairs.

Off the Job Training

A key requirement of an Apprenticeship is Off-the-job training. This must make up at least 20% of the apprentice's contracted hours, over the total duration of the apprentice's planned training period. Off-the-job training must be directly relevant to the apprenticeship standard and must take place within the apprentice's normal working hours either in the normal place of work or at College.

The new learning must be documented and reflected on through the Learner Journal on their e-portfolio (OneFile).

Entry Requirements

Individual employers may identify relevant entry requirements in terms of previous qualifications, trainability tests, or other criteria. Most candidates will have English and mathematics at level 2 on entry. However, because of the technical nature of the course, Lincoln College are only normally accepting candidates with a minimum grade 4 or C in English and Maths. Candidates would normally be expected to demonstrate some practical aptitude and be able to demonstrate general analytical skills, a capacity for and the potential to research, analyse and solve problems.

Apprentices will require access to a tablet/computer to access their e-portfolio (OneFile).

Knowledge, Skills and Behaviours

KNOWLEDGE and SKILLS

Electricians will use engineering knowledge and understanding to apply their technical and practical skills. They will contribute to the design, development, manufacture, construction, commissioning, operation or maintenance of products, equipment, processes, systems or services.

Electricians Must:

- Understand and apply the principles, practices and legislation for the termination and connection of conductors, cables and cords in electrical systems
- Understand and apply the practices and procedures for the preparation and installation of wiring systems and electrotechnical equipment in buildings, structures and the environment
- Understand and apply the principles, practices and legislation for the inspection, testing, commissioning and certification of electrotechnical systems and equipment in buildings, structures and the environment

- Understand and apply the principles, practices and legislation for diagnosing and correcting electrical faults in electrotechnical systems and equipment in buildings, structures and the environment
- Understand and apply the electrical principles associated with the design, building, installation and maintenance of electrical equipment and systems
- Oversee and organise the work environment.

In addition,

Installation Electricians must:

- Understand and apply the principles of planning and selection for the installation of electrotechnical equipment and systems in buildings, structures and the environment.

Maintenance Electricians must:

- Understand and apply the practices and procedures for planning and preparing to maintain electrotechnical systems and equipment.

In all of these activities, Electricians must understand and apply health and safety and environmental regulations, guidance notes and relevant codes of practice; and the requirements of the current edition of the Wiring Regulations.

BEHAVIOURS

Electricians will be expected to:

- Work reliably and effectively without close supervision.
- Accept responsibility for the work of themselves and others.
- Accept, allocate and supervise technical and other tasks.
- Use oral, written and electronic methods for the communication of technical and other information.
- Work effectively with colleagues, other trades, clients, suppliers and the public.
- Undertake work in a way that contributes to sustainable development.
- Maintain and enhance competence in own area.
- Exercise responsibilities in an ethical manner.

Assessment

Assessment is done through a combination of practical tasks, written assignments, oral discussions and online tests throughout the programme. To ensure that we can support you to meet these, we will complete an in-depth initial skills analysis to ensure that we can tailor our delivery to meet these unique requirements. We will then use the most relevant delivery methods to support your learners which include:

- One to one coaching from a dedicated, professional assessor/instructor allocated to the learner for the duration of the programme.
- Work based assignments and projects to be completed in an e-portfolio (OneFile).

- Knowledge – Skills & Behaviours.
- Job shadowing and mentoring.
- Review of progress every 4 – 10 weeks.
- Independent learning and research as directed by the assessor/instructor.

On-programme Assessment

Knowledge learning outcomes will be assessed via on-screen assessments, externally set and marked by the awarding organisations and a range of assignments, projects and written assessments (one or more tasks) covering theory and practical skills, externally set by the awarding organisation and internally marked by the centre.

Performance learning outcomes – skills, will require auditable evidence of competent performance from the workplace which demonstrate the apprentice's ability against set assessment criteria. The apprentice will complete a portfolio of evidence to show this.

Assessment of behaviours will require the apprentice to provide auditable evidence from the workplace which will clearly demonstrate that they have met these criteria.

The majority of assessments will be graded pass/fail. The exception is the theory assessments (onscreen and written) which forms part of '6k Electrical scientific principles and technologies' unit. This unit allows apprentices to demonstrate a greater breadth and level of understanding with sufficient marks available to differentiate between pass, merit and distinction. The assessments though graded pass/merit/distinction will not contribute to the overall apprenticeship grade. This provides transparency of candidate's knowledge but retains the importance of practical skills. It will allow employers to identify apprentices who are good in this area for further development into, for example, design.

End Point Assessment

There will be an End Point Assessment (EPA) as the final stage of an Apprenticeship. The Apprentice must demonstrate their learning to an independent end point assessor and the overall grade available is distinction, pass or fail.

EPA (AM2S) Costs

The initial AM2S cost is £776 and is incorporated in the overall negotiated price. Any failures will require re-sitting of elements failed and payment of a re-sit fee which is not incorporated into the price and will be calculated in relation to the scope of the failure and vary between £170 and £400.

End-point Assessment

The synoptic end-point assessment will be provided by the AM2. This single common assessment is externally set and marked by an independent body within an independent assessment structure.

For the last 30 years, the AM2 has been recognised within the electrotechnical industry as the benchmark of an individual's occupational competence, providing verification of competence for tens of thousands of electricians. The AM2 will assess the apprentice's skills, knowledge and confirm behaviours against the theory and performance criteria within the standard.

The AM2 is a robust, timed (16.5 hours typically over 2 and a half days) practical and theory (40 multiple-choice questions) assessment in sections, requiring candidates to perform a set of common tasks and procedures that a full scope electrical operative might face when working in commercial or industrial premises as well as dwellings. It assesses candidates on installation, inspection and testing and fault-finding; their work must comply with BS 7671, be in line with relevant health and safety legislation and conform to current industry practices and procedures.

Achievement of the AM2 (Electrotechnical Assessment of Occupational Competence) demonstrates apprentices have the level of competence expected by the Electrotechnical industry in the following key occupational areas:

- The interpretation of specifications, drawings and diagrams.
- Risk assessments and health and safety.
- Safe isolation.
- Planning and preparing to install, terminate and connect wiring systems.
- Installing, terminating and connecting wiring systems.
- Inspection, testing and certification.
- Fault diagnosis and correction of electrical faults.
- The understanding and application of industry recognised procedures, working practices and the requirements of statutory and non-statutory regulations.

In accordance with an installation specification and the relevant statutory and non-statutory regulations candidates will be expected to install, terminate, connect, inspect, test and commission:

- Lighting and power circuits.
- A three-phase distribution board and sub-circuit.
- A central heating/sustainable energy system.
- A safety services circuit and device.
- A data-cabling system.

The assessment is in four sections:

Section A – Composite Installation.

Section B – Inspection and Testing of the completed composite installation.

Section C – Fault Diagnosis and Correction.

Section D – Assessment of Applied Knowledge.

Behaviours: Behaviours will be assessed throughout the apprenticeship and as part of the Level 3 Electrotechnical Qualification.

Behaviours are envisaged as a pass/fail element and therefore do not impact on the grade of the apprenticeship. All successful apprentices at whatever grade will have confirmed correct behaviour.

Process: All elements of the AM2 will be marked. The AM2 will be graded pass/merit/distinction. Candidates will require 70% to pass, a level set and agreed by employers, with merit at 80% and distinction at 90%. It is possible to retake AM2 if necessary but any subsequent successful attempt will be graded Pass. Only on the first attempt can a candidate achieve Merit or Distinction.

Qualifications

Candidates will be required to achieve the Level 3 Electrotechnical Qualification, (Installation) or (Maintenance). Apprentices without level 2 English and mathematics will need to achieve this level prior to completion of their apprenticeship.

At the end of the apprenticeship the candidate will have satisfied the requirements for registration as EngTech by the Engineering Council.

Fees

As an Apprentice, you will pay no course fees. However, your employer may have to pay towards your training as well as providing you with a wage. All Apprentices must receive a minimum wage of £4.15 per hour within their first year of training from their employer, although they can, and often do, pay more. In the second and subsequent years of an Apprenticeship programme, the national minimum wage for your age would apply.

If you are an employer and want to find out more information regarding employer contributions and any further costs related to the Apprenticeship programme, please contact our dedicated Apprenticeship team at employers@lincolncollege.ac.uk

Business Benefits

Employers have designed the Apprenticeship Standards to meet the needs of the sector and industry. Ensuring they include:

- Relevant Knowledge, skills and behaviours ensure that the Standard is relevant to the occupation.
- Widening participation Apprenticeship standards provide opportunities to employees that may not previously have been available.
- Development tools A cost effective way to train your employees to undertake specific roles in your business.
- Return on Investment On average, an apprentice who has completed their course will increase business productivity by £214 per week (CEBR, 2015).