# City & Guilds Certificate in Electrical Testing and Verification of Electrical Installations (Ireland) (2407-01)

Version 2.0 (November 2024)

## Qualification Handbook

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| Version and date | Change detail | Section |
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| May 2012, v1.0 | Initial version | All |
| Nov 2024, v2.0 | Updated front and back matter to current City & Guilds template | Front and back matter |
| | Updated City & Guilds address | Contact us |
| | Corrected Learning Outcome wording for consistency | Unit 301 |

# 1 Introduction

This document tells you what you need to do to deliver the qualification:

| Area | Description |
|---|---|
| Who is the qualification for? | This qualification is aimed at those with responsibilities to perform or technically administrate initial verifications or periodic inspection, testing and certification of electrical installations.<br><br>The qualification relates to the inspection and testing of electrical installations as prescribed through regulatory bodies via CERs Criteria Document on electrical safety regulatory framework which endorses the National Rules for Electrical Installations for Ireland (current edition). |

## Qualification structure

To achieve the Certificate in Electrical Testing and Verification of Electrical Installations, learners must achieve the mandatory unit 301.

**Unit 301** Electrical Testing and Verification of Electrical Installations

## Qualification support materials

City & Guilds also provides the following publications and resources specifically for this qualification:

| Description | How to access |
|---|---|
| Assessment Pack | www.cityandguilds.com |

# 2 Centre requirements

This section outlines the approval processes for centres to offer this qualification and any resources that centres will need in place to offer the qualifications including qualification-specific requirements for centre staff.

### Centres already offering City & Guilds qualifications in this subject area

Existing centres wishing to offer this qualification must use the standard Qualification Approval Process.

## 2.1 Resource requirements

### CERs Criteria Document on electrical safety regulatory framework

The Criteria Document is fundamental to the operation of the electrical safety regulatory framework. It sets out the rules and responsibilities of stakeholders involved in electrical safety including the Safety Supervisory Bodies and Registered Electrical Contractors, whilst also outlining the disciplinary and appeals process for Registered Electrical Contractors.

### Controlled Electrical Works Paper

Under the 2006 Energy (Miscellaneous Provisions) Act, the legislation permits the certification of Controlled Works under the following circumstances:

- electrical works undertaken by a Registered Electrical Contractor that are self-certified through the issuance of a Certificate
- electrical works undertaken by a non-Registered Electrical Contractors that are examined and certified by an Inspector of a Safety Supervisory Body (ie ECSSAI or RECI).

### Restricted Electrical Works Paper

Restricted Electrical Works under the 2006 Act are defined as electrical activities that can only be carried out and certified by a Registered Electrical Contractor. Therefore any party carrying out Restricted Electrical Works, who is unregistered, will be committing an offence.

### National Rules for Electrical Installations

This document will be required by learners in order to carry out this qualification. Learners and centres must ensure that they are working from the current version of this document. All assessments will be based on the most up to date version of the document.

## Physical resources and site agreements

It is acceptable for centres to use specially designated areas within a centre to assess. The equipment, systems and machinery must meet the specification standards and be capable of being used under normal working conditions.

Specific equipment will be needed in order to carry out the practical assignment. Details of this equipment can be found in the Assignment Pack.

## Human resources

Staff delivering this qualification must be able to demonstrate that they meet the following occupational expertise requirements. They should:

- be technically competent in the area for which they are delivering training and/or have experience of providing training. This knowledge must be at least to the same level as the training being delivered
- have recent relevant experience in the specific area they will be assessing
- have credible experience of providing training.

Centre staff may undertake more than one role, eg tutor and assessor or internal verifier, but must never internally verify their own assessments.

## Assessors and internal verifiers

While the Assessor/Verifier (A/V) units are valued as qualifications for centre staff, they are not currently a requirement for the qualification.

## Continuing professional development (CPD)

Centres are expected to support their staff in ensuring that their knowledge remains current of the occupational area and of best practice in delivery, mentoring, training, assessment and verification, and that it takes account of any national or legislative developments.

## Candidate entry requirements

Candidates undertaking this qualification should be qualified electricians and have previously obtained a Level 6 of the NQAI Certificate in Electrical Craft Practice or equivalent and centres are required to evaluate their ability to conduct fixed wire testing.

## Age restrictions

There are no age limits attached to candidates undertaking the qualification unless this is a legal requirement of the process or the environment.

# 3 Structure of units

The units in this qualification are written in a standard format and comprise the following:

- City & Guilds reference number
- title
- guided learning hours
- unit aim
- information on assessment
- learning outcomes which are comprised of a number of assessment criteria.

# Unit 301 Electrical testing and verification of electrical installations

## Unit aim

This unit covers the knowledge and practical skills needed to perform or technically administrate initial verifications or periodic inspection and testing of electrical installations.

The qualification relates to the inspection and testing of electrical installations as detailed in the National Rules for Electrical Installations for Ireland (current edition).

## Learning outcomes

There are **six** learning outcomes to this unit.

The learner will be able to:

1. Understand the requirements for safe and secure isolation of electrical installations
2. Carry out safe isolation procedures to electrical installations
3. Understand the requirements for the completion of electrical inspection and test documentation as detailed in the National Rules for Electrical Installations
4. Carry out initial verification of electrical installations as detailed in the National Rules for Electrical Installations
5. Carry out periodic inspection and testing of electrical installations as detailed in the National Rules for Electrical Installations
6. Understand the regulatory procedures for certification of controlled and restricted works

## Assessment

This unit will be assessed by:

- an assignment covering practical skills
- oral questioning covering the underpinning knowledge.

## Unit 301 Electrical testing and verification of electrical installations

Learning outcomes and assessment criteria

### Outcome 1 Understand the requirements for safe and secure isolation of electrical installations

The learner can:

1. explain industry recognised safe isolation procedures when inspecting and testing electrical circuits
2. state why safe isolation procedures are carried out before inspection and testing electrical circuits.

### Outcome 2 Carry out safe isolation procedures to electrical installations

The learner can:

1. carry out safe isolation procedures in accordance with regulatory requirements
2. check the safety of electrical systems prior to conducting any inspection and testing of electrical installations.

### Outcome 3 Understand the requirements for the completion of electrical inspection and test documentation as detailed in the National Rules for Electrical Installations

The learner can:

1. state the documentation required to be completed when conducting an initial verification of electrical installations:
    - installations <50 kVA import capacity
    - installations > 50 kVA import capacity
    - sub-systems
    - minor electrical installation works
    - Test Record Sheet
2. state the purpose of initial verification documentation
3. state the documentation required to be completed when carrying out periodic inspection and testing of electrical installations in service
4. state the purpose of periodic inspection and testing of electrical installations
5. state the equipment and components that are not included in the scope of periodic inspection as detailed in the National Rules for Electrical Installations
6. state the four recommendation codes used for observations made during periodic inspection and testing.

## Outcome 4 Carry out initial verification of electrical installations as detailed in the National Rules for Electrical Installations

The learner can:

1. carry out a detailed inspection of installed electrical installation equipment and components
2. carry out pre-connection tests to an electrical installation to include:
    - continuity of protective, bonding and supplementary conductors
    - continuity of all conductors of ring final circuits
    - insulation resistance of the electrical installation
    - maximum resistance of protective conductors
    - verification of protection by separation of circuits
    - detection of erroneous connections between circuits
    - polarity and phase sequence
    - functional tests
3. carry out post connections test to an electrical installation to include:
    - fault loop impedance measurement
    - verification of operation of RCDs
4. verify results obtained in accordance with National Rules for Electrical Installation (current edition)
5. complete necessary documentation during and on completion of initial verification to include:
    - Completion Sheet
    - Test Record Sheet.

## Outcome 5 Carry out periodic inspection and testing of electrical installations as detailed in the National Rules for Electrical Installations

The learner can:

1. carry out detailed inspection of existing electrical installation equipment and components
2. carry out necessary periodic tests to an existing electrical installation
3. verify results obtained in accordance with National Rules for Electrical Installation (current edition)
4. make suitable recommendations for any defects or deviations
5. complete necessary documentation during and on completion of periodic inspection and testing to include:
    - Periodic Inspection Report for an Electrical Installation
    - Test Record Sheet.

## Outcome 6 Understand the regulatory procedures for certification of controlled and restricted works

The learner can:

1. state what works are Controlled Works
2. state what works are Restricted Works
3. state the distribution procedure of completed certification.

# 4 Assessment

## Summary of assessment methods

Candidates will be required to complete the following assessments for unit 301 to achieve this qualification:

- assignment covering the practical learning outcomes
- oral questioning covering the knowledge outcomes**.**

| Learning outcomes | Assessment type | |
|---|---|---|
| | **Oral questioning** | **Practical assignment** |
| 1. Understand the requirements for safe and secure isolation of electrical installations | ✓ | |
| 2. Carry out safe isolation procedures to electrical installations | | ✓ |
| 3. Understand the requirements for the completion of electrical inspection and test documentation as detailed in the National Rules for Electrical Installations | ✓ | |
| 4. Carry out initial verification of electrical installations as detailed in the National Rules for Electrical Installations | | ✓ |
| 5. Carry out periodic inspection and testing of electrical installations as detailed in the National Rules for Electrical Installations | | ✓ |
| 6. Understand the regulatory procedures for certification of controlled and restricted works | ✓ | |

## Assignments

All details on assignments and oral questioning can be found in the Assessment Pack.

# 5 Course design and delivery

## Initial assessment and induction

Centres will need to make an initial assessment of each candidate prior to the start of their programme to ensure they are entered for an appropriate type and level of qualification.

The initial assessment should identify any:

- specific training needs the candidate has, and the support and guidance they may require when working towards their qualification. This is sometimes referred to as diagnostic testing.
- units the candidate has already completed, or credit they have accumulated which is relevant to the qualification they are about to begin.

City & Guilds requires that centres provide an induction programme to ensure the candidate fully understands the requirements of the qualification they will work towards, their responsibilities as a candidate, and the responsibilities of the centre. It may be helpful to record the information on a learning contract.

Further guidance about initial assessment and induction, as well as a learning contract that centres may use, are available at **www.cityandguilds.com/international** and in the *.Centre Guide – Delivering International Qualifications* (section 11.4 and section 8).

## Recommended delivery strategies

Centre staff should familiarise themselves with the structure, content and assessment requirements of the qualification before designing a course programme.

Centres may design course programmes of study in any way which:

- best meets the needs and capabilities of their candidates
- satisfies the requirements of the qualification.

# Appendix 1 Sources of general information

The following documents contain essential information for centres delivering City & Guilds qualifications. They should be referred to in conjunction with this handbook. To download the documents and to find other useful documents, go to the **Centre document library** on **www.cityandguilds.com** or click on the links below:

**Centre Handbook: Quality Assurance Standards**

This document is for all approved centres and provides guidance to support their delivery of our qualifications. It includes information on:

- centre quality assurance criteria and monitoring activities
- administration and assessment systems
- centre-facing support teams at City & Guilds/ILM
- centre quality assurance roles and responsibilities.

The Centre Handbook should be used to ensure compliance with the terms and conditions of the centre contract.

**Centre Assessment: Quality Assurance Standards**

This document sets out the minimum common quality assurance requirements for our regulated and non-regulated qualifications that feature centre-assessed components. Specific guidance will also be included in relevant qualification handbooks and/or assessment documentation.

It incorporates our expectations for centre internal quality assurance and the external quality assurance methods we use to ensure that assessment standards are met and upheld. It also details the range of sanctions that may be put in place when centres do not comply with our requirements or actions that will be taken to align centre marking/assessment to required standards. Additionally, it provides detailed guidance on the secure and valid administration of centre assessments.

**Access arrangements: When and how applications need to be made to City & Guilds** provides full details of the arrangements that may be made to facilitate access to assessments and qualifications for candidates who are eligible for adjustments in assessment.

The **Centre document library** also contains useful information on such things as:

- conducting examinations
- registering learners
- appeals and malpractice.

**Useful contacts**

Please visit the **Contact us** section of the City & Guilds website.

**City & Guilds**

For almost 150 years, we have worked with people, organisations and economies to help them identify and develop the skills they need to thrive. We understand the life-changing link between skills development, social mobility, prosperity and success. Everything we do is focused on developing and delivering high-quality training, qualifications, assessments and credentials that lead to jobs and meet the changing needs of industry.

We partner with our customers to deliver work-based learning programmes that build competency to support better prospects for people, organisations and wider society.
We create flexible learning pathways that support lifelong employability because we believe that people deserve the opportunity to (re)train and (re)learn again and again – gaining new skills at every stage of life, regardless of where they start.

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City & Guilds
Giltspur House
5 – 6 Giltspur Street
London
EC1A 9DE

**cityandguilds.com/about-us**