

Component Specification

Electronics

NFQ Level 3

3N0885

1. Component Details

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|---------------------------|---|
| Title | Electronics |
| Teideal as Gaeilge | Leictreonaic |
| Award Class | Minor |
| Code | 3N0885 |
| Level | 3 |
| Credit Value | 10 |
| Purpose | The purpose of this award is to equip the learner with the knowledge, skill and competence to construct and test basic electronic circuits. |

| | |
|--------------------------|--|
| Learning Outcomes | Learners will be able to: |
| | 1 Identify the industrial applications of digital and analogue electronics |
| | 2 Define the concepts of voltage, current and resistance |
| | 3 Describe the concepts of voltage, current and resistance as applied in electronic circuits |
| | 4 Perform basic calculations involving voltage, current and resistance |
| | 5 Describe the operation of a digital and analogue electronic circuit |
| | 6 Apply appropriate health and safety procedures when working with electronic equipment |

- 7 Construct digital and analogue electronic circuits to perform a specific function
- 8 Use test instruments to check functionality and performance of a digital and analogue electronic circuit
- 9 Demonstrate the application of good communications, team working and quality awareness skills in an electronics environment.

Assessment

General Information

Details of FET assessment requirements are set out in [Assessment Guidelines for Providers](#).

All FET assessment is criterion referenced. Successful achievement of the award is based on learners attaining the required standards of knowledge, skill or competence.

The techniques set out below are considered the optimum approach to assessment for this component. In exceptional circumstances providers may identify alternative assessment techniques through the provider's application for programme validation which are **reliable** and **valid** but which are more appropriate to their context.

Assessment of a number of components may be integrated across programmes for delivery, provided that the learning outcomes of each minor award are assessed.

Group or team work may form part of the assessment, provided each learner's achievement is separately assessed.

All providers are required to submit an assessment plan as part of their application for programme validation. Assessment Plans will include information relating to scheduling and integration of assessment. See current FET validation guidelines at www.qqi.ie.

Assessment Techniques

In order to demonstrate that they have reached the standards of knowledge, skill and competence identified in all the learning outcomes, learners are required to complete the assessment(s) below.

The assessor is responsible for devising assessment instruments (e.g. project and assignment briefs, examination papers), assessment criteria and mark sheets, consistent with the techniques identified below and FETAC's assessment requirements.

Programme validation will require providers to map each learning outcome to its associated assessment technique. See current FET validation guidelines at www.qqi.ie.

All learning outcomes **must** be assessed and achieved

Portfolio / Collection of Work 30%

Skills Demonstration 70%

Description

Portfolio / Collection of Work

A portfolio or collection of work is a collection and/or selection of pieces of work produced by the learner over a period of time that demonstrates achievement of a range of learning outcomes. The collection may be self-generated or may be generated in response to a particular brief or tasks/activities devised by the assessor.

Skills Demonstration

A skills demonstration is used to assess a wide range of practical based learning outcomes including practical skills and knowledge. A skills demonstration will require the learner to complete a task or series of tasks that demonstrate a range of skills.

Recognition of Prior Learning (RPL)

Learners may be assessed on the basis of their prior knowledge and experience. Providers must be specifically quality assured to assess learners by this means. To do so they must complete B10, see Provider's Quality Assurance Guidelines and be included on the Register of RPL approved providers. See RPL Guidelines at www.fetac.ie for further information and registration details.

Grading

'Successful' indicates that the learner has achieved all of the learning outcomes for the award with some supervision and direction. The learner has demonstrated autonomy of action and has taken responsibility for generating appropriate evidence for all learning outcomes.

Specific Validation Requirements

There are no specific validation requirements for this award

Supporting Documentation

None

Access

To access programmes leading to this award the learner should have reached the standards of knowledge, skill and competence

associated with the preceding level of the National Framework of Qualifications. This may have been achieved through a formal qualification or through relevant life and work experience.

Transfer

Achievement of this award will enable the learner to transfer to other appropriate programmes leading to awards at the same level of the National Framework of Qualifications.

2. FET Award Standards

QQI award standards are determined within the National Framework of Qualifications (NFQ), <http://www.nfq-qqi.com>. QQI determines standards for the education and training awards that it makes itself and that are made by providers to whom it has delegated authority to make an award. Providers offering programmes leading to QQI awards **must** have their programme(s) validated in accordance with current validation policy (see www.qqi.ie).

Award standards are designed to be consistent with the NFQ's award classes i.e. major, special purpose, supplemental and minor awards. They are expressed in terms of **learning outcomes** i.e. concise statements of what the learner is expected to know or be able to do in order to achieve a particular award. Learning outcomes for FET awards are contained within the associated specifications:

| AWARD CLASS | STANDARDS | AWARDS |
|--------------------|--------------------------------|---|
| Major Award | Certificate Specification | Certificate (Levels 1 to 5) Advanced Certificate (Level 6) |
| Supplemental Award | Supplemental Specification | Supplemental Certificate (Level 3 to 6) |
| Special Purpose | Specific Purpose Specification | Specific Purpose Certificate (Levels 3 to 6) |
| Minor Award | Component Specification | Component Certificate (Levels 1 to 6) |

Award standards are thresholds, they describe standards of knowledge, skill or competence to be acquired, and where appropriate, demonstrated, by a learner before an award may be made.

Award standards will be reviewed from time to time as necessary. Minor changes may be made by the QQI executive outside the review cycle where necessary. Changes to standards are published on QQI's website. Providers with validated programmes and providers with delegated authority to make awards are responsible for monitoring relevant standards and making necessary responses to changes.

3. FET Credit

Every FET certificate and component specification includes an FET credit value (Table 1). FET credit is quantified in multiples of 5 FET credits (up to 50 hours of learner effort). Learner effort is based on the time taken by typical learners at the level of the award to achieve the learning

outcomes for the award. It includes all learning time involved including: guided learning hours, self-directed learning and assessment.

Table 1: FET Credit Values

| NFQ Level | Major Awards Credit Values | Default Credit Values Minor Awards | Other Permitted Minor Award Credit Values | Special Purpose and Supplemental Award Credit Value Ranges |
|-----------|----------------------------|------------------------------------|---|--|
| 1 | 20 | 5 | 10 | |
| 2 | 30 | 5 | 10 | |
| 3 | 60 | 10 | 5,20 | >5 and<60 |
| 4 | 90 | 10 | 5,15,20 | >5 and<90 |
| 5 | 120 | 15 | 5,10,30 | >5 and <120 |
| 6 | 120 | 15 | 5,10,30 | >5 and <120 |

Guide to Level

Learning outcomes at this level relate to a low volume of practical capability and of knowledge of theory. The outcomes relate to the performance of relatively simple work and may be fairly quickly acquired. Outcomes at this level may also confer a minimum employability for low skilled occupations and include functional literacy and numeracy.

| Strand | Sub-strand | Nature of learning |
|------------------|-------------------|---|
| Knowledge | Breadth | Knowledge moderately broad in range |
| | Kind | Mainly concrete in reference and with some comprehension of relationship between knowledge elements |
| Know How & Skill | Range | Demonstrate a limited range of practical and cognitive skills and tools |
| | Selectivity | Select from a limited range of varied procedures and apply known solutions to a limited range of predictable problems |
| Competence | Context | Act within a limited range of contexts |
| | Role | Act under direction with limited autonomy; function within familiar, homogeneous groups |
| | Learning to Learn | Learn to learn within a managed environment |
| | Insight | Assume limited responsibility for consistency of self-understanding and behaviour |

Extract from 'Determinations for the Outline National Framework of Qualifications': NQAI