

Component Specification

Physics

NFQ Level 4

4N2826

1. Component Details

Title	Physics
Teideal as Gaeilge	Fisic
Award Class	Minor
Code	4N2826
Level	4
Credit Value	10
Purpose	The purpose of this award is to equip the learner with the knowledge, skill and competence to explain and apply a range of physics concepts and principles in a supervised environment and apply them to everyday life.
Learning Outcomes	Learners will be able to: <ol style="list-style-type: none">1 Explain speed, displacement, velocity and acceleration2 Explain the principle of conservation of energy3 Distinguish between renewable and non renewable energy4 Outline efficient uses of energy in the home5 Distinguish between conductors and insulators of heat6 Outline the need for insulation in the home7 Outline the properties of light and sound

- 8 Explain reflection and refraction of light
- 9 Distinguish between a converging and diverging lens
- 10 Outline applications of reflection, refraction and lenses in everyday life
- 11 Demonstrate the laws of magnets and the magnetic field
- 12 Outline applications of magnets in everyday life
- 13 Explain frequency, amplitude and wavelength in relation to waves
- 14 Distinguish between static and current electricity
- 15 Outline the relationship between current, voltage and resistance
- 16 Outline the role of fuses and circuit breakers in the context of electricity in the home
- 17 Distinguish between direct current and alternating current
- 18 Carry out a range of experiments, including identifying good and bad conductors of heat, demonstrating the refraction of light, showing that sound needs a medium in which to travel, testing electrical conduction in a variety of materials and classifying each material as a conductor or insulator of electricity, and demonstrating Ohm's Law
- 19 Exercise proper safety procedures when working in a science laboratory including general principles, eating, drinking, protective clothing and glassware safety
- 20 Write up an experiment under the headings aim, materials, diagram, method, results and conclusion.

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

Skills Demonstration	30%
Learner Record	30%
Examination - Theory	40%

Description

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.

Learner Record

A learner record is the learner's self-reported and self-reflective record in which he/she describes specific learning experiences, activities, responses and skills acquired.

Examination - Theory

An examination provides a means of assessing a learner's ability to recall and apply knowledge, skills and understanding within a set period of time and under clearly specified conditions.

A theory-based examination assesses the ability to recall, apply and understand specific theory and knowledge.

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

Pass	50% - 64%
Merit	65% - 79%
Distinction	80% - 100%

Specific Validation Requirements

The provider must have all of the following in place to offer this award:

Access to a science laboratory meeting current Health and Safety standards.

1.

Supporting Documentation

1. 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

Successful completion of this component award enables the learner to transfer to programmes leading to other certificates where this component is a mandatory or an elective requirement.

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

Independence is the hallmark of this level. Learning outcomes at this level correspond to a growing sense of responsibility for participating in public life and shaping one's own life. The outcomes at this level would be associated with first-time entry to many occupational sectors.

Strand	Sub-strand	Nature of learning
Knowledge	Breadth	Broad range of knowledge
	Kind	Mainly concrete in reference and with some elements of abstraction or theory
Know How & Skill	Range	Demonstrate a moderate range of practical and cognitive skills and tools
	Selectivity	Select from a range of procedures and apply known solutions to a variety of predictable problems
Competence	Context	Act in familiar and unfamiliar contexts
	Role	Act with considerable amount of responsibility and autonomy
	Learning to Learn	Learn to take responsibility for own learning within a supervised environment
	Insight	Assume partial responsibility for consistency of self-understanding and behaviour

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