

Certificate Specification NFQ Level 5

Laboratory Techniques 5M3807

1. Certificate Details

Title	Laboratory Techniques
Teideal as Gaeilge	Teicnící Saotharlainne
Award Class	Major
Code	5M3807
Level	5
Credit Value	120
Purpose	The purpose of this award is to enable the learner to acquire the knowledge skill and competence to work independently and under supervision in a science laboratory and or to progress to further and or higher education and training.
Statements of Knowledge, Skill and Competence	Learners will be able to:
Knowledge	
<i>Breadth</i>	Demonstrate understanding of the basic principles of a broad range of scientific disciplines.
<i>Kind</i>	Demonstrate understanding of the scientific method and the application of scientific principles in laboratory work.
Know How & Skill	
<i>Range</i>	Apply a range of scientific theory and practice to a laboratory context.
<i>Selectivity</i>	Select a range of laboratory techniques to examine and analyse specific scientific topics.
Competence	
<i>Context</i>	Take responsibility for appropriate and safe use of laboratory equipment, including cleaning, storing and organising equipment.

<i>Role</i>	Use appropriate equipment to carry out specific laboratory experiments accurately including analysis of results.
<i>Learning to Learn</i>	Take responsibility for own learning within a structured context.
<i>Insight</i>	Demonstrate awareness of social, ethical and legal issues in conducting experiments.
	The learning outcomes associated with this award are outlined in the associated Component Specifications.
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.
Progression	Achievement of this award will enable the learner to progress to other appropriate programmes leading to awards at the next or higher levels of the National Framework of Qualifications.
Progression Awards	Learners who successfully complete this award may progress to a range of different awards.
Grading	Pass Merit Distinction The grade achieved will be determined by the grades achieved on the components

2. Certificate Requirements

The total credit value required for this certificate is 120. This will be achieved by completing:

Award Code	Title	Level	Credit Value
All of the following component(s)			
5N2751	Laboratory Skills	5	15
A minimum credit value of 45 from the following components			
5N2746	Biology	5	15
5N0556	Maths for STEM	5	30
5N2747	Chemistry	5	15
5N1460	Physics	5	15
5N1833	Mathematics	5	15

A minimum credit value of 15 from the following components

5N0690	Communications	5	15
5N1367	Teamworking	5	15
5N1390	Personal Effectiveness	5	15
5N1615	Problem Solving	5	15

A minimum credit value of 15 from the following components

5N2985	Personal and Professional Development	5	15
5N1356	Work Experience	5	15
5N1433	Work Practice	5	15

A minimum credit value of 15 from the following components

5N0749	Anatomy and Physiology	5	15
5N0750	Animal Anatomy and Physiology	5	15
5N1637	Materials Science	5	15
5N2006	Nutrition	5	15
5N0737	Microbiology	5	15
5N2748	Food Chemistry	5	15
5N1794	Safety and Health at Work	5	15
5N2530	Soil Science and Growing Media	5	10

The remaining credit value of 15 can be obtained by using vocationally relevant component(s) from level 5. A maximum of 15 credits may be used from either level 4 or level 6.

3. Supporting Documentation

None

4. Specific Validation Requirements

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

- 1 Access to a science laboratory meeting current Health and Safety standards

5. Europass Certificate Supplement

The Europass Certificate Supplement for this award can be accessed at: www.qqi.ie.

6. 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 QQI 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.

7. 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 include a broad range of skills that require some theoretical understanding. The outcomes may relate to engaging in a specific activity, with the capacity to use the instruments and techniques relating to an occupation. They are associated with work being undertaken independently, subject to general direction.

Strand	Sub-strand	Nature of learning
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Knowledge	Breadth	Broad range of knowledge
	Kind	Some theoretical concepts and abstract thinking, with significant depth in some areas.
Know How & Skill	Range	Demonstrate a broad range of specialised skills and tools
	Selectivity	Evaluate and use information to plan and develop investigative strategies and to determine solutions to varied unfamiliar problems
Competence	Context	Act in a range of varied and specific contexts, taking responsibility for the nature and quality of outputs; identify and apply skill and knowledge to a wide variety of contexts
	Role	Exercise some initiative and independence in carrying out defined activities; join and function within multiple, complex and heterogeneous groups
	Learning to Learn	Learn to take responsibility for own learning within a managed environment
	Insight	Assume full responsibility for consistency of self- understanding and behaviour

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