Dearbhú Cáilíochta agus Cáilíochtaí Éireann
Quality and Qualifications Ireland

Component Specification

Ecological Field Methods

NFQ Level 5

5N1439

1. Component Details

Title	Ecological Field Methods
Teideal as Gaeilge	Modhanna Oibre éiceolaíochta Allamuigh
Award Class	Minor
Code	5N1439
Level	5
Credit Value	15
Purpose	The purpose of this award is to equip the learner with the knowledge, skill and competence to work independently and under supervision in an ecological field environment and undertake a range of ecological field methods.
Learning Outcomes	Learners will be able to:

1 Explore the history of ecology as a science

2 Summarise the various disciplines of ecology to include population ecology, systems ecology and landscape ecology

3 Examine how an ecosystem functions

4 Examine the characteristics of an ecological crisis and explore the importance of the red data list

5 Identify a range of habitat types to include methods for evaluating habitat quality

6 Investigate the common characteristics of and differences between special areas of conservation,

special protection areas and natural heritage areas, national parks and nature reserves

7 Examine how the rural environmental protection scheme (REPS) operates

8 Examine the three categories of organisms including consumers, producers and decomposers

9 Examine the important factors to consider in tree planting including planting method, species selection, site suitability and tree protection

10 Explore ecology terminology including carrying capacity, ecosystem, biosphere dynamics and stability

11 Explore ‘abiotic factors’ as geographical, geological, hydrological and climatologically parameters

12 Investigate a range of management strategies to include the control and eradication of invasive alien species, vertebrate pest management

13 Investigate intraspecific and interspecific relations

14 Analyse river water quality using a biological monitoring tool

15 Utilise a range of data logging equipment and sensors to include Global Positioning System, geographic information systems and compass

16 Utilise a range of forestry techniques to ascertain tree growth rates, height and coverage

17 Conduct field soil tests to evaluate soil type, structure and texture

18 Measure specific abiotic factors, including those relating to: water, soil, air, temperature and light

19 Relate satellite imagery to landscape features and vegetation

20 Utilise keys in the identification of various species of fauna, flora and fungi

21 Employ basic methods in bat monitoring

22 Employ quadrats in random sampling, and belt transects in systematic sampling

23 Conduct basic bird counts to include point counts and area searches

24 Employ the capture-mark-recapture method to estimate animal abundance

25 Interpret the information contained in a site dossier

26 Employ various field tools to include sweep nets, fish nets, grapnel, settlement tray and tullgren funnel

27 Evaluate habitat quality from the perspective of different organisms

28 Evaluate a range of effects resulting from an ecological crisis

29 Evaluate the conservation strategies for each of the following:

red squirrel, corncrake, marsh fritillary, hen harrier, cornflower and machair

30 Employ methods to accurately read maps and compile a series of habitat maps

31 Design a field sampling program for insects

32 Evaluate issues to consider in seed collection

33 Perform quantitative surveys of plants and animals in selected ecosystems to establish frequencies of organisms, percentage cover of an organism and population density of an organism.

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

Examination - Theory	40%
Skills Demonstration	40%
Learner Record	20%

Description

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.

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.

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	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	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

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**

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