

## Component Specification

### Sustainable Water Management

NFQ Level 5

5N5027

#### 1. Component Details

<b>Title</b>	Sustainable Water Management
<b>Teideal as Gaeilge</b>	Bainistíocht Inbhuanaithe Uisce
<b>Award Class</b>	Minor
<b>Code</b>	5N5027
<b>Level</b>	5
<b>Credit Value</b>	15
<b>Purpose</b>	The purpose of this award is to equip the learner with the knowledge, skill and competence to work independently and under supervision in a sustainable water management environment and be familiar with sustainable water management strategies.
<b>Learning Outcomes</b>	<p>Learners will be able to:</p> <ol style="list-style-type: none"><li>1 Explore the nature of water to include the hydrologic cycle</li><li>2 Investigate the hydrologic terms source water, precipitation, canopy interception, infiltration, run off, subsurface flow and evapotranspiration, stream, lagoon, marsh, wetland, fen, aquifer and turlough</li><li>3 Examine the importance of groundwater as a long term reservoir in the hydrological cycle</li><li>4 Examine the concepts of residence times and groundwater recharge</li></ol>

- 5 Analyse how landform development is influenced by fluvial processes
- 6 Investigate the key characteristics of a range of stream channels to include how rivers and streams relate to each other
- 7 Explore the relationship between soils, geology and water
- 8 Explore the working of the water framework directive
- 9 Examine the treatment technology available for both grey water and black water management
- 10 Explore the need for transboundary cooperation in flood prevention, particularly the principle of solidarity
- 11 Measure river water quality using a biological assessment method
- 12 Identify various fluvial landforms
- 13 Illustrate ground and surface water interconnections within a catchment area
- 14 Identify a range of common water-related problems, including storm events, eutrophication, groundwater contamination, over abstraction and the demand for drinking water
- 15 Distinguish between point and diffuse sources of water pollution
- 16 Evaluate the effect of trees and other vegetation on the water table
- 17 Conduct a visual assessment of a non-wadeable stream or river to include waterbody character, human alterations, observed disturbances, water clarity, local anecdotal information, channel dimension and channel substrate type
- 18 Evaluate the impact of human activity on water quality
- 19 Rationalise various techniques in wetland and riparian zone management
- 20 Evaluate the characteristics of a catchment basin and recognise the importance of river basins in terms of ecology and resource management

- 21 Analyse the hydrological aspects of landscapes to include the its influence on soil erosion, transport of nutrients, providing a habitat for aquatic biota and providing a connective network in the landscape
- 22 Evaluate the importance of wetlands, including habitat function

## **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](http://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](http://www.qqi.ie).

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

Examination - Theory	40%
Assignment	30%
Learner Record	30%

## 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.*

### Assignment

*An assignment is an exercise carried out in response to a brief with specific guidelines as to what should be included. An assignment is usually of short duration and may be carried out over a specified period of time.*

### 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](http://www.fetac.ie) for further information and registration details.

## Grading

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

<b>Specific Validation Requirements</b>	There are no specific validation requirements
<b>Supporting Documentation</b>	None
<b>Access</b>	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.
<b>Transfer</b>	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](http://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

