



QQI

Quality and Qualifications Ireland
Dearbhú Cáilíochta agus Cáilíochtaí Éireann

Component Specification NFQ Level 6

Hazardous Materials 6N20491

1. Component Details

Title	Hazardous Materials
Teideal as Gaeilge	Ábhair Ghuaiseacha
Award Type	Minor
Code	6N20491
Level	6
Credit Value	5
Purpose	The purpose of this award is to equip the learner with the relevant knowledge, skill and competence to effectively and safely operate at a hazardous materials incident, as a member of a fire service team, cognisant of one's own safety, the safety of their team and the public.

Learning Outcomes	Learners will be able to:
1	Explain the principles and procedures for working at hazardous material incidents.
2	Appraise the physical properties of materials and interpret their relevance at hazardous material incidents.
3	Explain the methods and safety procedures relating to operating at a range of incidents involving hazardous materials including a transportation incident.
4	Identify hazardous materials and retrieve relevant information from available sources.

- 5 Don and doff chemical protective clothing.
- 6 Wear chemical protective clothing in accordance with approved procedures in managing a hazardous materials incident.
- 7 Establish a safe working environment, including decontamination area and appropriate cordons.
- 8 Apply appropriate decontamination techniques and procedures.
- 9 Use initiative in utilising the appropriate techniques and tactics in the risk area, while wearing chemical protective clothing.
- 10 Implement best safety and professional practice having regard to the risks and control measures, in responding to a range of operational incidents.
- 11 Develop an understanding of the need to review and reflect on operational practice and use this to inform future performance and professional development.

Assessment

General Information

All assessment should be planned in accordance with the programme assessment strategy developed as part of the programme submission for validation. See **Policies and Criteria for Validation of Programmes**. Assessment should be undertaken consistently and reflect current assessment guidelines. See www.qqi.ie.

All FET assessment is criterion referenced. Successful achievement of the award is based on learners attaining the required standards of knowledge, skill or competence consistent with the **minimum intended programme learning outcomes**.

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 QQI's assessment requirements.

Programme validation will require providers to map each learning outcome to its associated assessment technique. All learning outcomes **must** be assessed and achieved in accordance with the **minimum intended module learning outcomes** set out in the validated programme.

Skills Demonstration	70%
Examination - Theory	30%

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.

The assessor will devise one or more skills demonstrations covering learning outcomes 4-11 inclusive.

Assessing whether a learner does or does not achieve competence is a challenge for training in hazardous materials. A learner who does not achieve competence in a task is potentially a danger to themselves, their colleagues and those members of the public they are entrusted to serve. A single serious event such as a panic reaction in the risk area, when performing a task during a skills demonstration assessment, must be carefully considered in light of the potential life safety implications.

This assessment is competency based, and all tasks must be achieved, otherwise the candidate is deemed to have been unsuccessful.

The learner is required to complete a skill demonstration in each of the areas listed:

Scene safety arrangements – 15%

Information retrieval – 15%

Don and doff chemical protective clothing – 15%

Decontamination arrangements – 10%

Manage the effects of the incident – 15%

The assessor must provide clear guidelines on the tasks to be completed in each of the areas listed and identify potential faults, including critical faults affecting life safety. Safety critical tasks must be passed.

This assessment must be passed in order to achieve the award.

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.

The assessor will devise a theory examination covering learning outcomes 1-4 inclusive.

This assessment must be passed in order to achieve the award.

Recognition of Prior Learning (RPL)

To support the development and implementation of RPL with regard to access, granting credit/exemptions and achievement of awards/parts of awards, providers should refer to **QQI's Statutory Guidelines for Quality Assurance**, the **Policies and Criteria for Validation of Programmes** and the **Principles and Operational Guidelines for the Recognition of Prior Learning in Further and Higher Education and Training** available at www.qqi.ie

Grading

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

Specific Validation Requirements

The provider should have

1. Access to a training facility in compliance with current health and safety regulations
2. Access to fire service facilities of sufficient scale to ensure that all learners have access to the vehicles and equipment required to practice and achieve learning outcomes to include:
 - Suitably sized training rooms to accommodate classroom presentations
 - Suitably sized training space to provide briefs and debriefs in operational gear and storage of breathing apparatus (BA) sets
 - Suitably sized welfare, changing and drying facilities for operational gear
 - Suitably sized training areas to accommodate the various training exercises – this must include the ability to practice/demonstrate all the relevant layouts as per the Standard Operational Guidance, including decontamination requirements
 - A standard Class B pumping appliance with all associated equipment, including hose, ladders, portable pumps and main pumps
 - All associated hazardous material equipment, including self-contained BA sets, BA cylinders (200 or 300 bar), suitable BA cylinder filling facilities, BA control boards, entry control items, gas tight suits, associated decontamination equipment and connections
3. The maximum ratio should be 1 trainer to 6 learners.
4. Stated policies and procedures by the provider to deal with potential risks that may be encountered.

Supporting Documentation

1. Current relevant legislation
2. Standard Operational Guidance Documentation – National Directorate for Fire and Emergency Management
3. National Incident Command System – Department of the Environment, Heritage and Local Government
4. Chemdata
5. Dangerous Goods Emergency Action Code List - National Chemical Emergency Centre UK
6. Emergency Response Guidebook - Guidebook for First Responders During the Initial Phase of a Dangerous Goods/ Hazardous Materials Incident. (U.S. Department of Transportation)
7. Health and Safety Authority statutory regulations, codes of practice and guidelines
8. Manufacturers' vehicle and equipment operating instructions

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.

In addition, learners will be required to successfully complete a physical test and medical examination and must have achieved the Firefighting Skills and Using Breathing Apparatus awards.

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 comprehensive range of skills which may be vocationally-specific and/or of a general supervisory nature, and require detailed theoretical understanding. The outcomes also provide for a particular focus on learning skills. The outcomes relate to working in a generally autonomous way to assume design and/or management and/or administrative responsibilities. Occupations at this level would include higher craft, junior technician and supervisor.

Strand	Sub-strand	Nature of learning
Knowledge	Breadth	Specialised knowledge of a broad area
	Kind	Some theoretical concepts and abstract thinking, with significant underpinning theory
Know How & Skill	Range	Demonstrate a comprehensive range of specialised skills and tools
	Selectivity	Formulate responses to well defined abstract problems
Competence	Context	Act in a range of varied and specific contexts involving creative and non-routine activities; transfer and apply theoretical concepts and/or technical or creative skills to a range of contexts
	Role	Exercise substantial personal autonomy and often take responsibility for the work of others and/or for the allocation of resources; form and function within, multiple and complex heterogeneous groups.
	Learning to Learn	Learn to evaluate own learning and identify needs within a structured learning environment; assist others in identifying learning needs
	Insight	Express an internalised, personal world view, reflecting engagement with others.

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