QQI
Quality and Qualifications Ireland
Dearbhú Cáilíochta agus Cáilíochtaí Éireann

Certificate Specification NFQ Level 5

Plastics Injection Moulding 5M3080

1. Certificate Details

Title	Plastics Injection Moulding
Teideal as Gaeilge	Múnlú Plaisteach Insteallta
Award Type	Major
Code	5M3080
Level	5
Credit Value	120
Purpose	The purpose of this award is to equip the learner with the knowledge, skills and competence to work in an injection moulding manufacturing environment producing plastic components to an industry acceptable standard, independently and without supervision.
Statements of Knowledge, Skill and Competence	Learners will be able to:
Knowledge	
Breadth	Demonstrate a working knowledge of key injection moulding terms in the areas of safety, mould design, machine optimisation and troubleshooting.
Kind	Describe the physical and chemical properties of polymers.
Know How & Skill	
Range	Utilise skills and tools in performing the installation and de-installation of specified moulds with due consideration for health and safety.
Selectivity	Set up the injection unit of a moulding machine and ancillary equipment.

Competence

Context	Apply knowledge and skills in analysing general moulding faults and propose appropriate corrective action .
Role	Optimise the injection moulding process to achieve consistent quality mouldings to specifications.
Learning to Learn	Demonstrate the capacity to take responsibility for own learning within a managed context.
Insight	Reflect on own performance within the polymer environment to inform self understanding and further personal and professional development.
	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)			
5N3034	Plastics Materials and Processing	5	15
5N3035	Injection Moulding Machine Setting	5	15

5N3036	Injection Moulding Process Optimisation	5	15
5N3037	Injection Moulding Process Control	5	15
A minimum credit value of 15 from the following components			
5N0690	Communications	5	15
5N0972	Customer Service	5	15
5N1390	Personal Effectiveness	5	15
5N1367	Teamworking	5	15
A minimum credit value of 15 from the following components			
5N1356	Work Experience	5	15
5N1433	Work Practice	5	15
A minimum credit value of 15 from the following components			
5N3049	Statistical Process Control	5	15
5N4285	Plastic Part Design	5	15
5N4317	Essentials of Mould Design	5	15
5N3040	Industrial Design of Experiments	5	15
5N3042	Risk Assessment	5	15
5N3044	Product and Process Validation	5	15
5N3045	Computer Systems Validation	5	15
5N3046	Quick Tooling Changeover	5	15
5N3047	Hydraulic Equipment Maintenance	5	15
5N3048	Pneumatic Equipment Maintenance	5	15
5N3155	Plastic Materials Selection	5	15

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

3. Supporting Documentation

1. Manufacturer's operating manuals and procedures

4. Specific Validation Requirements

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

1. Injection moulding machines, moulds and ancillaries
2. Injection moulding grade plastic material
3. Extruder- tube and sheet
4. Blow moulding machine
5. Testing Equipment : Differential Scanning Calorimeter (DSC), Fourier Transform Infra-Red (FTIR) Microscope, Thermal Gravimetric Analyser (TGA), Impact Tester (IT),Compression(CT) and Tensile Testers(TT)

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
Knowledge	Breadth	Broad range of knowledge
	Kind	Some theoretical concepts and abstract thinking, with significant depth in some areas.
		Some underpinning theory
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