



Extension #1

CERTIFICATE OF VALIDATION

Provider name	National College of Ireland
Date of validation	13-Jun-19

Enrolment interval	First intake	Last intake
	September 2019	September 2024

	Code	Title	Award	Duration (Full Time)	Duration (Part Time)	Exit
Principal programme	PG24076	Higher Certificate in Science in Data Science	Higher Certificate (Major Award at NFQ Level 6) 6M20733 120 Credits	2 years	2 years	
Embedded Programme						

	Full Time	Part Time
Maximum Intakes per annum:	1	1
Minimum Learners per Intake:	15	15
Maximum Learners per Intake:	60	60

Principal Programme

5 Year Plan: Planned total enrolment i.e. aggregated across all intakes in all approved centres.					
	Year 1	Year 2	Year 3	Year 4	Year 5
Minimum intake into first year	15				
Maximum intake into first year	120				

Target learner groups	<p>The Higher Certificate in Science in Data Science is aimed at full time and part time learners. There are a number of different categories of potential learners that have been identified as suitable candidates for this course:</p> <ul style="list-style-type: none"> Learners who have their Leaving Certificate complete and who seek an introduction to Data Science with a view to pursuing a career or further education in the field. <p>Learners who are currently working in IT or science sectors and don't have the relevant academic experience and are looking for a progression path in their</p>
------------------------------	--



	current working environment or are looking to up-skill and move to a new job in Data Science. The award may also serve as an exit award for those learners who successfully complete stages 1 and 2 of the BSc Honours in Data Science who opt to leave the degree prior to completing the full programme.	
Approved countries for provision (i.e. where enrolled learners will be based)	Ireland	
Delivery mode: Full-time/part-time	Full and Part Time	
List the teaching and learning modes¹	Blended learning combining different strategies, including traditional classroom lectures, tutorials and seminars, flipped classroom, problem and project-based learning, team work and work-based learning. Synchronous Online delivery may also be used in some cases.	
Does the blend of modalities predominantly involve remote e-learning (Yes/No)	No	
Brief synopsis of the programme (e.g. who it is for, what is it for, what is involved for learners, what it leads to.)	This programme is a 2-year Higher Certificate in Science degree aimed at Leaving Certificate graduates or mature applicants who wish to follow a career in data science. The programme will run both on part-time and full-time basis in order to cater to the different types of students. The students will have to attend lectures and tutorials in the 4 classroom or online over the academic year, as well as to study independently. Students will study for 2 stages taking modules that cover topics such as Mathematics, Statistics, Programming, Problem Solving, Computing Systems, Databases, Data Visualisation & Machine Learning. The programme leads to a level 6 Higher Certificate in Science in Data Science awarded by QQI. Graduates of this programme may pursue further education or employment in the mining, modelling, management, analysis and visualisation of data.	
Summary of staffing requirements (the details are provided in the module descriptors)	WTE ²	Qualifications and experience
	4	Lecturers with a Masters or PhD level qualification in computing or a related discipline with academic experience delivering modules in ICT, Maths and Statistics, Programming, and Data Analytics at Level 8.
	1	Programme Director who is responsible for the academic management of the programme and may also be a lecturer on the programme. The programme director will have at least a Masters or PhD qualification in computing or a related discipline.
	1	Programme Co-ordinator with experience in relationship management and programme coordination.
Outline the physical resource requirements (the details are provided in the module descriptors)	The programme requires appropriate learning spaces to facilitate the teaching, learning & assessment strategy of the programme. Learning spaces should accommodate traditional classrooms, spaces for collaborative learning and access to appropriate technologies as required by individual module curriculum (e.g., Word, Excel, PowerPoint, R/RStudio, SPSS, or similar products). Students	

¹ Defined later in this document.

² WTE is the whole-time equivalent number. The number 1 indicates a fulltime person fully dedicated to the programme.



	must also have access to appropriate personal study space. Access to appropriate recreation and dining spaces are also required.	
Outline specifications for the ratio of learners to teaching staff	Staff to learner ratio	Learning activity type
	1:100	Lectures
	1:25	Tutorial/Labs
	6:160	Overall WTE/staff learning ratio



Conditions of Validation of the Programmes Covered by this Certificate of Validation

Part 1: Statutory Conditions of validation

The statutory (section 45(3) of the 2012 Act) conditions of validation are that the provider of the programme shall:

1. co-operate with and assist QQI in the performance of QQI's functions in so far as those functions relate to the functions of the provider,
2. establish procedures which are fair and consistent for the assessment of enrolled learners to ensure the standards of knowledge, skill or competence determined by QQI under section 49 (1) are acquired, and where appropriate, demonstrated, by enrolled learners,
3. continue to comply with section 65 of the 2012 Act in respect of arrangements for the protection of enrolled learners, if applicable, and
4. provide to QQI such information as QQI may from time to time require for the purposes of the performance of its functions, including information in respect of completion rates.

Part 2 Conditions of Validation Established by QQI Under section 45(4)(b) of the 2012 Act

[The PAEC must endorse all the conditions in Part 2. These lists of potential conditions must be checked for each programme. Delete any that do not apply.]

Part 2.1 Condition of Validation Concerning a Change in the QQI Award or Award Standard

1. Where QQI changes an award title, an award specification or an award standard that a programme depends upon, the provider shall not enrol any further learners on the affected programmes unless informed otherwise in writing by QQI (e.g. by the issue of a revised certificate of validation). The programme is considered validated for learners already enrolled on the affected programme.

Part 2.2 Condition of Validation Concerning the Duration of Enrolment

1. The duration of enrolment is the interval during which learners may be enrolled on the validated programme.

Validation is determined by QQI for a specified number of years of enrolment appropriate to the particular programme as indicated on the certificate on validation subject to unit 9.2.1. It is a condition of validation that the programme does not enrol any new learners outside this interval. A typical duration would be five years.

If a provider wishes to continue to enrol learners to the programme beyond this interval the provider must arrange in good time for it to be validated again by QQI, or exceptionally the provider may apply for extension of the duration of enrolment (unit (14)). In this context the provider may apply for validation of the programme from first principles or, alternatively, the provider may avail of the process for revalidation (unit (13)) by QQI.

Part 2.3 General Condition of Validation

The provider of the programme shall:



1. Ensure that the programme as implemented does not differ in a material way from the programme as validated; differing in a material way is defined as differing in any aspect of the programme or its implementation that was material to QQI's validation criteria.
2. Ensure that the programme is provided with the appropriate staff and physical resources as validated.
3. Implement in respect of the programme its written quality assurance procedures (as approved by QQI).
4. Make no significant change to the programme without the prior approval of QQI. (See unit (8)).
5. Unless otherwise agreed by QQI in writing, start implementing the programme as validated and enrol learners within 18 months of validation.
6. Continue in respect of the validated programme to comply with section 56 of the 2012 Act in respect of procedures for access, transfer and progression.
7. Implement the programme and procedures for assessment of learners in accordance with the Approved Programme Schedule and notify QQI in writing of any amendments to this arising from changes to the programme; see unit (9).
8. When advertising and promoting the programme and awards, use the programme title as validated, and the correct QQI award title(s), award type(s) and award class(es) indicating the level of the award(s) on the National Framework of Qualifications.
9. Adhere to QQI regulations and procedures for certification.
10. Notify QQI in writing without delay of:
 - a. any material change to the programme;
 - a. anything that impacts on the integrity or reputation of the programme or the corresponding QQI awards;
 - b. anything that infringes the conditions of validation; or
 - c. anything that would be likely to cause QQI to consider reviewing the validation.
11. Notify QQI in writing to determine the implications for the provider's validated programmes, where the provider is likely to, or planning to, merge (amalgamate) with another entity or to acquire, or be acquired by, another entity (see unit (12.5)).
12. Report to QQI, when required or requested, on its implementation of the programme and compliance with the conditions of validation.

Part 2.4 General Condition of Validation Arising from Specialised Validation Policy and Criteria

Part 2.5 Special Condition of Validation



Approved Programme Schedule(s)

Name of Provider:		National College of Ireland											
Programme Title		Higher Certificate in Data Science											
Award Title		Higher Certificate in Data Science											
Stage Exit Award Title³		N/A											
Modes of Delivery (FT/PT):		FT											
Teaching and learning modalities		Direct contact via lectures and demonstrations, Blended e-learning											
Award Class ⁴	Award NFQ level	Award EQF Level	Stage (1, 2, 3, 4, ..., or Award Stage):	Stage NFQ Level ²	Stage EQF Level ²	Stage Credit (ECTS)	Date Effective	ISCED Subject code					
Major	8		1	6		60	Sept 2019						
Module Title (Up to 70 characters including spaces)	Semester no where applicable. (Semester 1 or Semester2)	Module		Credit Number ⁵	Total Student Effort Module (hours)					Allocation Of Marks (from the module assessment strategy)			
		Status	NFQ Level ¹ where specified		Credit Units	Total Hours	Class (or equiv) Contact Hours	Directed e-learning	Hours of Independent Learning	Work-based learning effort	C.A. %	Supervised Project %	Proctored practical demonstration %
Computational Thinking	1	M	6	5	125	24		101		100			
Discrete Mathematics	1	M	6	5	125	60		65		40			60
The Computing Industry	1	M	6	5	125	24		101		100			
Problem Solving & Programming Concepts	1	M	6	5	125	36		89		100			
Introduction to Data Science	1	M	6	10	250	48		202		30	70		
Programming I	2	M	6	5	125	48		77		50		50	
Introduction to Data Modelling and Databases	2	M	6	10	250	48		202		40			60
Statistics I	2	M	6	10	250	60		190		100			
Computing Systems	2	M	6	5	125	36		89		40			60



Name of Provider:		National College of Ireland											
Programme Title		Higher Certificate in Data Science											
Award Title		Higher Certificate in Data Science											
Stage Exit Award Title³		N/A											
Modes of Delivery (FT/PT):		FT											
Teaching and learning modalities		Direct contact via lectures and demonstrations, Blended e-learning											
Award Class ⁴	Award NFQ level	Award EQF Level	Stage (1, 2, 3, 4, ..., or Award Stage):	Stage NFQ Level ²	Stage EQF Level ²	Stage Credit (ECTS)	Date Effective	ISCED Subject code					
Major	8		Award	6		60	September 2019						
Module Title (Up to 70 characters including spaces)	Semester no where applicable. (Semester 1 or Semester2)	Module		Credit Number ⁵	Total Student Effort Module (hours)					Allocation Of Marks (from the module assessment strategy)			
		Status	NFQ Level ¹ where specified		Credit Units	Total Hours	Class (or equiv) Contact Hours	Directed e-learning	Hours of Independent Learning	Work-based learning effort	C.A. %	Supervised Project %	Proctored practical demonstration %
				ECTS									
Data Visualisation	1	M	6	5	125	36		89		100			
Programming II	1	M	6	5	125	48		77		50		50	
Advanced Databases	1	M	6	10	250	48		202		40			60
Statistics II	1	M	6	10	250	48		202		50			50
Linear Algebra	2	M	6	5	125	36		89		40			60
IT Project Management	2	M	6	5	125	36		89		40			60
Data Mining and Machine Learning	2	M	6	10	250	48		202		40	60		
Programming III	2	E	6	10	250	60		190		50		50	
Data Analysis Project	2	E	6	10	250	60		190			100		
Special Regulations (Up to 280 characters)													



Name of Provider:		National College of Ireland											
Programme Title		Higher Certificate in Data Science											
Award Title		Higher Certificate in Data Science											
Stage Exit Award Title³		N/A											
Modes of Delivery (FT/PT):		PT											
Teaching and learning modalities		Direct contact via lectures and demonstrations, Blended e-learning											
Award Class ⁴	Award NFQ level	Award EQF Level	Stage (1, 2, 3, 4, ..., or Award Stage):	Stage NFQ Level ²	Stage EQF Level ²	Stage Credit (ECTS)	Date Effective	ISCED Subject code					
Major	8		1			60	Sept 2019						
Module Title (Up to 70 characters including spaces)	Semester no where applicable. (Semester 1, Semester 2 or Semester 3)	Module		Credit Number ⁵	Total Student Effort Module (hours)					Allocation Of Marks (from the module assessment strategy)			
		Status	NFQ Level ¹ where specified	Credit Units ECTS	Total Hours	Class (or equiv) Contact Hours	Directed e-learning	Hours of Independent Learning	Work-based learning effort	C.A. %	Supervised Project %	Practical demonstration %	Proctored written exam %
Computational Thinking	1	M		5	125	24		101		100			
The Computing Industry	1	M		5	125	24		101		100			
Problem Solving & Programming Concepts	1	M		5	125	36		89		100			
Discrete Mathematics	1	M		5	125	60		65		40			60
Programming I	2	M		5	125	48		77		50	50		
Introduction to Data Modelling and Databases	2	M		10	250	48		202		40			60
Computing Systems	2	M		5	125	36		89		40			60
Introduction to Data Science	3	M		10	250	48		202		30	70		
Statistics I	3	M		10	250	60		190		100			
Special Regulations (Up to 280 characters)													



Name of Provider:		National College of Ireland											
Programme Title		Higher Certificate in Data Science											
Award Title		Higher Certificate in Data Science											
Stage Exit Award Title³		N/A											
Modes of Delivery (FT/PT):		PT											
Teaching and learning modalities		Direct contact via lectures and demonstrations, Blended e-learning											
Award Class ⁴	Award NFQ level	Award EQF Level	Stage (1, 2, 3, 4, ..., or Award Stage):	Stage NFQ Level ²	Stage EQF Level ²	Stage Credit (ECTS)	Date Effective	ISCED Subject code					
Major	8	6	Award	8	6	60	September 2019						
Module Title (Up to 70 characters including spaces)	Semester no where applicable. (Semester 1, Semester 2 or Semester 3)	Module		Credit Number ⁵	Total Student Effort Module (hours)					Allocation Of Marks (from the module assessment strategy)			
		Status	NFQ Level ¹ where specified		Credit Units	Total Hours	Class (or equiv) Contact Hours	Directed e-learning	Hours of Independent Learning	Work-based learning effort	C.A. %	Supervised Project %	% practical demonstration
Programming II	1	M	6	5	125	48		77		50		50	
Statistics II	1	M	6	10	250	48		202		50			50
Data Visualisation	1	M	7	5	125	36		89		100			
Advanced Databases	2	M	6	10	250	48		202		40			60
Linear Algebra	2	M	6	5	125	36		89		40			60
IT Project Management	2	M	6	5	125	36		89		40			60
Data Mining and Machine Learning	3	M	6	10	250	48		202		40	60		
Programming III	3	E	6	10	250	60		190		50		50	
Data Analysis Project	3	E	6	10	250	60		190			100		
Special Regulations (Up to 280 characters)													