CERTIFICATE OF VALIDATION

Provider Name	National College of Ireland
Date of Validation	20-Dec-18

	First intake	Last intake
Enrolment Interval	Sep-15	Sep-19

	Code	Title	Award	Duration (Months)	Annual Intakes
Principal Programme	PG22548	Bachelor of Science (Honours) in Computing	Bachelor of Science (Honours) (Major Award at NFQ Level 8) 8M20305 240 credits	4 years	2
Embedded Programmes	na	N/A			

Principal Programme

5 Year Plan: Planned total enrolment i.e. aggregated across all intakes and all approved centres

	Year 1	Year 2	Year 3	Year 4	Year 5
Minimum Intake into first year	15	15	15	15	15
Maximum Intake into first year	100	100	100	100	100

Target Learner groups	The programme is aimed at school leavers, mature students and part-time learners who wish to have a career in the ICT sector.
Brief Synopsis of the programmes	The overall goal of this BSc (Hons) in Computing degree is to provide graduates with essential understanding of software development skills that are applied to specialist areas such as Gaming and Multimedia Design, Mobile Application Development, Software Development, Cloud Computing, Cybersecurity, Internet of Things and Data Analytics. Through its innovative teaching and learning strategies, the programme develops an in-depth expertise of core technical disciplines. The technical skills are developed through an understanding of programming, web design, rich internet applications, web services, databases, business analysis, software engineering, data communications, computer architecture, operating systems, and business and network security.
	The programme emphasizes the development of transferable skills through decision making, team work, problem solving, planning, communication, research skills and presentations. The learners will gain industry experience through the work placement that will augment both their transferable skills and the knowledge gained from the programme. An alternative academic internship is available to students to provide similar skills that they would achieve in a work setting. The learners will consolidate the knowledge and skills acquired in the listed modules by carrying out a final year project.
	Learners, who successfully complete the BSc (Hons) in Computing will be able to progress to a level 9 programme such as MSc in Mobile Technologies, MSc in Cloud Computing, MSc in Web Technologies and MSc in Data Analytics at the National College of Ireland, or a suitable level 9/10 National Framework of Qualifications course at a different institution.
Delivery mode: full-time / part-time	Full-time and Part-time
Teaching and Learning Modes	A variety of teaching strategies, which include—but is not limited to—lectures, tutorials, problem

Teaching and Learning Modes based learning (PBL), enquiry based learning, practical work, flip classroom, seminars, case-based learning, project-based work and team work are included throughout the programme.

Approved countries

Ireland

Physical resource requirements

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).

Staff Profiles

Qualifications and Experience	WTE
Lecturers with a Masters or PhD level qualification in computing or a related discipline with academic experience delivering modules in ICT, Programming, Cybersecurity and Data Analytics at level 8.	4
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-ordinators with experience in relationship management and programme co-ordination.	1

Approved Centres

Centre	Minimum Number of learners per intake per Centre	Maxium Number of learners per intake per Centre
NCI, Mayor Square, IFSC, Dublin	15	100

Learner Teacher Ratios

Learning Activity	Ratio
Tutorials/Labs	1:25
Lecture	1:100

Programme being replaced by this programme

Prog Code	Programme Title	Validated	To Close
PG19998	BACHELOR OF SCIENCE (HONOURS) in Computing	23-Jul-07	

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)

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

1.

Part 2.5 Special Conditions of Validation

n/a

Approved Programme Schedule(s)

Name of Provider	National College of Ireland	Programme Codes		BSHC
Programme Title (i.e. named award)	BSc (Honours) in Computing			
Award Title (QQI named award)	Bachelor of Science (Hons)			
Stage Exit Award Title				
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc.)	FT/PT/ACCS/BLENDED			
Stage	1	Number of Stages		4
Award Class		Award NQF Level		8
Award EQF Level	6	Stage Credits (ECTS)		60
Stage NQF Level	8	Stage EQF Level		
Date Effective	14/09/18	ISCED Subject Code		

Ref	Module Title	Semester	Module		ECTS Credit Number	Total Student Effort			Allocation of Marks		
			Status (M/E)	NQF Level		Total Hours	Contact Hours	Independent Learning	Course Work %	End of Module Formal Examination %	Total %
1.1	Introduction to Mathematics for Business & Computing	1	M	6	5	125	36	89	50	50	100.00
1.2	The Computing Industry	1	M	6	5	125	36	89	100	0	100.00
1.3	Managing Your Learning	1	M	6	5	125	36	89	100	0	100.00
1.4	Problem Solving and Programming Concepts	1	M	6	5	125	48	77	100	0	100.00
1.5	Web Design	1	M	6	10	250	72	178	50	50	100.00

1.6	Introduction to Programming	2	M	6	5	125	48	77	50	50		100.00
1.7	Operating Systems	2	M	6	5	125	36	89	50	50		100.00
1.8	Software Applications for Business	2	M	6	5	125	36	89	100	0		100.00
1.9	Computer Architecture	2	M	6	5	125	36	89	50	50		100.00
1.10	Digital Multimedia	2	M	6	10	250	72	178	100	0		100.00

Special Regulations:
None

Name of Provider			National College of Ireland		Programme Codes		BSHC	
Programme Title (i.e. named award)			BSc (Honours) in Computing					
Award Title (QQI named award)			Bachelor of Science (Hons)					
Stage Exit Award Title								
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)			FT/PT/ACCS/BLENDED					
Stage			2		Number of Stages		4	
Award Class					Award NQF Level			8
Award EQF Level			6		Stage Credits (ECTS)			60
Stage NQF Level			8		Stage EQF Level			
Date Effective			14/09/18		ISCED Subject Code			

Ref	Module Title	Semester	Module		ECTS Credit Number	Total Student Effort			Allocation of Marks		
			Status (M/E)	NQF Level		Total Hours	Contact Hours	Independent Learning	Course Work %	End of Module Formal Examination %	Total %
2.1	Introduction to Databases	1	M	6	5	125	36	89	50	50	100.00
2.2	Web Application Development	1	M	6	10	250	72	178	100	0	100.00
2.3	Object Oriented Programming	1	M	6	5	125	48	77	100	0	100.00
2.4	IT Project Management	1	M	6	5	125	36	89	40	60	100.00
2.5	Fundamentals of Business Analysis	1	M	6	5	125	36	89	50	50	100.00
2.6	Business Entrepreneurship	2	M	6	5	125	36	89	100	0	100.00

2.7	Data Communications and Networking	2	M	6	5	125	36	89	40	60		100.00
2.8	Interdisciplinary Team Project	2	M	6	10	250	72	178	100	0		100.00
2.9	Data Structures	2	M	6	5	125	48	77	50	50		100.00
2.10	Software Engineering	2	M	6	5	125	36	89	100	0		100.00

Special Regulations:
None

Name of Provider	National College of Ireland	Programme Codes		BSHC

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Award Title (QQI named award)	Bachelor of Science (Hons)

Stage Exit Award Title	

Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)	FT/PT/ACCS/BLENDED

Stage	3	Number of Stages	4

Award Class	Major	Award NQF Level	8

Award EQF Level	6	Stage Credits (ECTS)	60

Stage NQF Level	8	Stage EQF Level	

Date Effective	14/09/18	ISCED Subject Code	

Ref	Module Title	Semester	Module		ECTS Credit Number	Total Student Effort			Allocation of Marks		
			Status (M/E)	NQF Level		Total Hours	Contact Hours	Independent Learning	Course Work %	End of Module Formal Examination %	Total %
3.1	Advanced Programming	1	M	7	5	125	48	77	50	50	100.00
3.2	Advanced Internet Technologies	1	M	7	5	125	36	89	100	0	100.00
3.3	Advanced Databases	1	M	7	5	125	36	89	50	50	100.00
3.4	Team Project	1	M	7	10	250	72	178	100	0	100.00
3.5	Wireless Networking	1	E	7	5	125	36	89	40	60	100.00
3.6	Business Communication Skills	2	GE1	7	10	250	72	178	100	0	100.00

3.7	Application Lifecycle	2	GE1	7	10	250	48	202	100	0	100.00
3.8	Business Application Development	2	GE1	7	10	250	72	178	100	0	100.00
3.9	Work Placement	2	GE2	7	30	750		750	100	0	100.00

Special Regulations

Note 1: GE1 represent modules of the academic internship. These modules are intrinsically interlinked and together their learning outcomes correlate to those of the work placement.

Note 2: Students must pass all three modules of the academic internship. If one or more modules are not passed then all modules of the academic internship must be repeated in the next academic year in line with the repeat assessment strategy for the work placement.

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Stage Exit Award Title								
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)			FULL_TIME,PART_TIME					
Stage			Award		Number of Stages			4
Award Class			Major		Award NQF Level			8
Award EQF Level			6		Stage Credits (ECTS)			60
Stage NQF Level			6		Stage EQF Level			
Date Effective			14/09/18		ISCED Subject Code			

Ref	Module Title	Semester	Module		ECTS	Total Student Effort			Allocation of Marks		
			Status (M/E)	NQF Level	Credit Number	Total Hours	Contact Hours	Independent Learning	Coursework %	End of Module Assessment %	Total %
4.1	Software Project	1, 2	M	8	20	500.00	48.00	452.00	100	0	100.00
4.2	Strategic Management	1	M	8	5	92.00	3.00	89.00	30	70	100.00
4.3	Introduction to Artificial Intelligence	1	M	8	5	92.00	3.00	89.00	40	60	100.00
4.4	Web Services and API Development	1	M	8	5	92.00	3.00	89.00	100	0	100.00
4.5	Cloud Computing	1	GE1	8	5	92.00	3.00	89.00	0	100	100.00
4.6	Computer Graphics Design and Animation	1	GE2	8	5	3.00	3.00	0.00	50	50	100.00
4.7	Security Principles	1	GE4/GE7	8	5	3.00	3.00	0.00	30	70	100.00
4.8	Business Data Analysis	1	GE5	8	5	10.00	3.00	7.00	50	50	100.00
4.9	IoT Principles	1	GE6	8	5	125.00	24.00	101.00	40	60	100.00
4.10	Data Application Development	1	GE1/GE3/GE5	8	5	81.00	4.00	77.00	100	0	100.00

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Stage Exit Award Title							
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)			FULL_TIME,PART_TIME				
Stage			Award		Number of Stages		4
Award Class			Major		Award NQF Level		8
Award EQF Level			6		Stage Credits (ECTS)		60
Stage NQF Level			6		Stage EQF Level		
Date Effective			14/09/18		ISCED Subject Code		

Ref	Module Title	Semester	Module		ECTS	Total Student Effort			Allocation of Marks		
			Status (M/E)	NQF Level	Credit Number	Total Hours	Contact Hours	Independent Learning	Coursework %	End of Module Assessment %	Total %
4.11	Multimedia and Mobile Application Development	1	GE2/GE3/GE4/GE6	8	5	3.00	3.00	0.00	50	50	100.00
4.13	Secure Programming	1	GE7	8	5	125.00	36.00	89.00	60	40	100
4.14	Computing Infrastructure	2	GE1	8	5	125.00	36.00	89.00	70	30	100.00
4.15	Applied Artificial Intelligence	2	GE2	8	5	125.00	36.00	89.00	50	50	100.00
4.16	Cloud Gaming	2	GE2	8	5	125.00	36.00	89.00	40	60	100.00
4.17	Advanced Mobile Application Development	2	GE4	8	5	3.00	3.00	0.00	100	0	100.00
4.18	Data and Web Mining	2	GE5	8	10	125.00	48.00	77.00	50	50	100.00
4.19	Advanced Business Data Analysis	2	GE5	8	5	92.00	3.00	89.00	40	60	100.00
4.20	Data Mining and Visualisation Principles	2	GE6	8	5	48.00	48.00	0.00	100	0	100.00

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Stage Exit Award Title							
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)			FULL_TIME,PART_TIME				
Stage			Award		Number of Stages		4
Award Class			Major		Award NQF Level		8
Award EQF Level			6		Stage Credits (ECTS)		60
Stage NQF Level			6		Stage EQF Level		
Date Effective			14/09/18		ISCED Subject Code		

Ref	Module Title	Semester	Module	ECTS	Total Student Effort			Allocation of Marks		Total %
			Status (M/E)	NQF Level	Credit Number	Total Hours	Contact Hours	Independent Learning	Coursework %	End of Module Assessment %
4.21	IoT Software Development	2	GE6	8	5	125.00	24.00	101.00	100	0	100.00
4.22	Distributed Systems	2	GE1/GE3/GE4	8	5	92.00	3.00	89.00	75	25	100.00
4.23	Cloud Application Development	2	GE1/GE3/GE6	8	5	3.00	3.00	0.00	100	0	100.00
4.24	Usability Design	2	GE2/GE3/GE4	8	5	125.00	36.00	89.00	100	0	100.00
4.25	Advanced Secure Programming	2	GE7	8	5	125.00	36.00	89.00	50	50	100.00
4.26	Penetration Testing	2	GE7	8	5	125.00	36.00	89.00			100.00
4.27	Digital Forensics	2	GE7	8	5	125.00	36.00	89.00	50	50	100.00

Special   Regulations:
The Software Project module is assessed over both semesters in the final year and accounts for 15 credits per semester. Learners may specialise in one of 6 areas in their final year: Cloud Computing, Gaming & Multimedia, Software Development, Mobile Application Development, Data Analytics Internet of Things or Cyber Security.

Cloud Computing GE1: Cloud Computing, Data Application Development, Computing Infrastructure, Cloud Application Development and Distributed Systems modules.

Gaming & Multimedia GE2: Computer Graphics Design & Animation, Multimedia and Mobile Application Development, Usability, Applied Artificial Intelligence and Cloud Gaming modules.

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Stage Exit Award Title								
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)			FULL_TIME,PART_TIME					
Stage			Award		Number of Stages			4
Award Class			Major		Award NQF Level			8
Award EQF Level			6		Stage Credits (ECTS)			60
Stage NQF Level			6		Stage EQF Level			
Date Effective			14/09/18		ISCED Subject Code			

Ref	Module Title	Semester	Module		ECTS	Total Student Effort			Allocation of Marks		
			Status (M/E)	NQF Level	Credit Number	Total Hours	Contact Hours	Independent Learning	Coursework %	End of Module Assessment %	Total %

Software Development GE3: Data Application Development, Multimedia and Mobile Application Development, Usability, Cloud Application Development and Distributed Systems modules.

Mobile Application Development GE 4: Business & Network Security, Multimedia and Mobile Application Development, Usability, Advanced Mobile Application Development and Distributed Systems modules.

Data Analytics GE5: Business and Data Analysis, Data Application Development, Advanced Business Data Analysis and Data & Web Mining.

Internet of Things GE 6: Multimedia and Mobile Application Development; IoT Principles; IoT Software Development; Cloud Application Development; Data Mining and Visualisation Principles.

Cyber Security GE7: Security Principles, Secure Programming, Advanced Secure Programming, Penetration Testing, Digital Forensics

The Internet of Things Theme in the BSc (Hons) in Computing will consist of the following modules from the entire programme namely:

Computer Architecture, Interdisciplinary Team Project, Team Project, Multimedia & Mobile Application Development, IoT Principles, IoT Software Development, Cloud Application Development, Data Analytics and Visualisation, and *Software Project*.

The Cyber Security Theme in the BSc (Hons) in Computing will consist of the following modules from the entire programme namely:

Operating Systems, Introduction to databases, web application development, Security Principles, Secure Programming, Advanced Secure Programming, Penetration Testing, Digital Forensics and Software Project