

# BSC (HONOURS) IN COMPUTING

**Duration:**

Four Years  
Full-Time

**NFQ Level:**

Level 8

**CAO Points Guide:\***

270

**CAO Code:**

NC003



\*For each course we have given a guideline based on our points over the past three years. This is a guide only, points vary each year.

Note: This course is currently being reviewed and may change slightly before it starts in September 2025. Every effort has been made to ensure the accuracy of the information provided at this time. Any changes will be approved and validated by QQI before the course commences.

## About the Course

NCI's innovative BSc (Honours) in Computing will provide you with programming and advanced problem-solving skills, to create software applications that solve real-world problems. This exciting course will expose you to areas like games programming, software development, cybersecurity, blockchain, artificial intelligence/machine learning/data analytics, internet of things and digital business transformation.

The course is industry-focused with a six-month work placement in the third year. NCI students are highly sought after and complete their work experience in companies such as Microsoft, O2, ESB, Wells Fargo, Dotmobi, Datalex and Intel.

Graduates of this course can create software applications on mobile devices, in the cloud, on the web and in gaming, using the latest technologies; understand how to incorporate multimedia into software applications; can analyse and interpret data to address real business problems; understand the cloud computing paradigm and its implications for software, infrastructure and platforms; and can secure software applications from malware and hacking.

## Who is the course for?

This full-time computing course will appeal to students interested in the possibilities created by information and communications technology. The course is for school leavers, mature students and graduates of QQI level 5/6 programmes who wish to embark on a course of full-time study.

## Career Prospects

Graduates of this course can perform a number of roles, including software developer, mobile application developer, IT support, project engineer, security analyst and games developer. Previous employers have included Microsoft, Lionbridge, Hewlett Packard, KPMG, Tapadoo, Arvato, Salesforce, Facebook and Vivendi Games. This course is also suitable for those who wish to pursue a career in teaching as it is recognised by the Teaching Council to teach computing.



"From building small scale to enterprise-level applications, building desktop and web applications to creating cutting edge machine learning models, this course truly provides students with a huge amount of computing knowledge and skills."

Joshua Cassidy  
BSc Hons in Computing



## Course Structure and Award

This undergraduate course is a four-year honours degree. The course is run over eight semesters with continuous assessments held throughout the course and examinations at the end of each semester. On completion, you will receive a QQI BSc (Honours) Degree in Computing at level 8 on the National Framework of Qualifications. The course also prepares students for industry-recognised certification in leading technologies.

## Further Study Options

Upon successful completion of the BSc (Honours) in Computing, graduates can progress to postgraduate courses at level 9 on the National Framework of Qualifications such as the MSc in Cloud Computing, MSc in Cybersecurity, MSc in Data Analytics, MSc in Fintech or the MSc in Artificial Intelligence at NCI.

## Course Fees

This course qualifies under the Free Fees Initiative and Student Grant Scheme.

## Admission Requirements and Policies

Minimum entry requirements are a grade H5 or above in two higher level subjects together with a minimum of O6/H7 in four other subjects. A minimum of grade O6/H7 must be obtained in English or Irish. A grade O6/H7 must be obtained in Mathematics. Applicants from a PLC/further education course must have a full level 5/6 award, three distinctions and meet the CAO points requirement. Mature applicants, applicants with a disability or those applying through the DARE or HEAR access schemes should refer to our Admissions section on p62, which also includes our admission policies, including laptop requirements.

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Graduates have worked in organisations like **Microsoft, Lionbridge, Hewlett Packard, KPMG, Tapadoo, Realex Payments, Opennet, Leaseplan, Arvato, Salesforce, Facebook and Vivendi Games.**

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# COURSE CONTENT

Subject to QQI validation

## Year 1

### Semester 1

- Discrete Mathematics
- Introduction to Data Science & Artificial Intelligence
- Computational Thinking
- Programming Concepts
- Web Design & Development

### Semester 2

- Computer Architecture
- Operating Systems
- Introduction to Data Modelling & Databases
- The Computing Industry
- Introduction to Programming

## Year 2

### Semester 1

- Data Communications & Networking
- Advanced Databases
- Data Programming
- Object Oriented Programming
- Web Application Development

### Semester 2

- Innovation & Business Entrepreneurship
- Software engineering
- Software Quality & Testing
- Team Project
- Data Structures & Algorithms

## Year 3

### Semester 1

- Security Fundamentals and Development
- Advanced Computer Networks

Students will choose either the Technical, Business Computing, or Networking electives. Students who complete the Business Computing Electives will go on to the 4th Year specialisation in Digital Business Transformation. Students who complete the Networking Electives will go on to the Networking and Cloud Infrastructure specialisation. Students who complete the Technical Electives may choose to specialise in either AIML, Software Development, Cybersecurity or Games Programming.

#### • Technical Electives

- Artificial Intelligence
- Advanced Programming

Or

#### • Business Computing Electives

- Business and Artificial Intelligence
- Project Management

Or

#### • Networking Electives

- Artificial Intelligence
- System Administration & Virtualisation

### Semester 2

Students will choose one of the following options:

- Work Placement
- Academic Internship
- Service Learning
- International Exchange

## Year 4 - Choose a Specialisation

### Year 4

#### Games Programming

##### Semester 1

- Final Year Project (year-long module)
- Governance, Ethics, Security and Sustainability
- Cloud Application Development
- Game Systems

##### Semester 2

- Mixed Reality
- Games Programming
- Metaverse

### Year 4

#### Cybersecurity

##### Semester 1

- Final Year Project (year-long module)
- Governance, Ethics, Security and Sustainability
- Cloud Application Development
- Secure Application Programming

##### Semester 2

- Penetration Testing
- Digital Forensics
- DevOpsSec

### Year 4

#### Digital Business Transformation

##### Semester 1

- Final Year Project (year-long module)
- Governance, Ethics, Security and Sustainability
- Cloud Application Development
- Business Analysis

##### Semester 2

- Digital Transformation
- Strategic Management
- Business Process Automation

### Year 4

#### Software Development

##### Semester 1

- Final Year Project (year-long module)
- Governance, Ethics, Security and Sustainability
- Cloud Application Development
- Secure Application Programming

##### Semester 2

- IoT Fundamentals and Development
- DevOpsSec
- Blockchain

### Year 4

#### AIML

##### Semester 1

- Final Year Project (year-long module)
- Governance, Ethics, Security and Sustainability
- Cloud Application Development
- Statistics & Machine Learning

##### Semester 2

- Applied Deep Learning
- Artificial Intelligence & Sustainability
- Data Application Development

### Year 4

#### Networking & Cloud Infrastructure

##### Semester 1

- Final Year Project (year-long module)
- Governance, Ethics, Security and Sustainability
- Cloud Application Development
- Cloud Scale Infrastructure

##### Semester 2

- Software Defined Networks
- DevOpsSec
- Cloud Security

\* Electives and specialisations may include prerequisites, are subject to change, and availability is subject to class sizes.