NATIONAL COLLEGE OF IRELAND

BACHELOR OF SCIENCE (HONS) IN COMPUTING

With specialisations in Software Development, Cybersecurity, Games Programming, Artificial Intelligence/Machine Learning/Data Analytics, Digital Business Transformation.

FACTFILE

Application: Apply online at www.ncirl.ie

Spread the cost with our direct debit plan

Part-time Schedule

Start Date
Sept 2025

Duration
4 years; 3 semesters per year.
Use of blended learning.

Delivery
Blended - Livestream with some on-campus stream classes, scheduled in advance.

Indicative Timetable
Two evenings per week, 18.00 - 22.00 and Saturdays 09.00 - 18.00

Fees
€4,350 per annum
(Fees revised annually)

Course Description

This innovative BSc (Hons) in Computing with specialisations is intended to appeal to anyone who is interested in developing practical knowledge and skills in the application of technology to help solve problems in business, data analytics, artificial intelligence, machine learning, blockchain, gaming and cybersecurity. In your final year, you will study modules based on your chosen specialisation from important and exciting areas of computer science.

This computing course will equip you to create software applications for business transformation, artificial intelligence, data analytics, gaming, blockchain and internet of things. You will also understand how to incorporate user data into software applications and how to engineer a software application from requirements through analysis, design, implementation and testing. The course will also allow you to develop your business and interpersonal skills.

In your final year, you will study modules based on your chosen specialisation from important and exciting areas of computer science.

Who is the course for?

This part-time course is aimed at those working in the information and communications technology industry and wishing to develop their knowledge and skills in the area of computing and to improve their career prospects. It will also appeal to anyone wishing to move into the information and communications technology industry.

Entry Requirements

This IT degree course is designed to appeal to those at work or seeking to re-enter the workforce. There are no specific academic requirements as applicants are considered based on relevant work and other experience. Applicants may be required to attend an interview as part of the application process. Applicants under 21 will be assessed based on Leaving Certificate or equivalent.

Laptop Requirement

This programme has a BYOD (Bring Your Own Device) policy. Specifically, students are expected to successfully participate in lectures, laboratories and projects using a laptop computer with a substantial hardware configuration.

A suitable configuration is 8GB of RAM (16GB are recommended); a modern 64-bit x86 processor (Intel i5 or superior); 250+ GB of available space in hard disk; WiFi card; and a recent version of Ubuntu, macOS or Windows. It is the responsibility of the student to ensure their laptop is functioning correctly and that they have full administrator rights to the machine.

NCI IT does not provide support for personal devices. Some students may be able to avail of the Student Laptop Loan Scheme, subject to eligibility. See page 87 for more information.

Award and Progression

The Bachelor of Science (Honours) in Computing is awarded by QQI at level 8 on the National Framework of Qualifications. This award will allow progression to level 9 courses on the NFQ. The final award is calculated from the weighted results of stages 2, 3 and 4. The course also prepares students for industry-recognised certificates in leading technologies.

COURSE CONTENT

Year 1
Semester 1
- Discrete Mathematics
- Operating Systems
- Computational Thinking
- Programming Concepts

Semester 2
- Computer Architecture
- Introduction to Programming
- Introduction to Data Modelling and Databases

Semester 3
- Web Design and Development
- The Computing Industry
- Introduction to Data Science & AI

Year 2
Semester 1
- Web Application Development
- Object Oriented Programming
- Data Communications & Networking

Semester 2
- Data Structures and Algorithms
- Advanced Databases
- Data Programming

Semester 3
- Software Engineering
- Software Quality & Testing
- Innovation and Business Entrepreneurship
- Team Project

Year 3
Semester 1
- Advanced Computer Networks
- Workplace Readiness
- Technical Electives*:
  - Artificial Intelligence
  - Advanced Programming
- Business Computing Electives*:
  - Business & Artificial Intelligence
  - Project Management
- Networking and Cloud Infrastructure
  - Artificial Intelligence
  - System Administration & Virtualisation

*Students should choose either the Technical Electives or the Business Computing Electives. Students who complete the Business Computing Electives will go on to the 4th Year specialisation in Digital Business Transformation. Students who complete the Technical Electives may choose to specialise in either Games Programming, Software Development, Cybersecurity, Blockchain, Artificial Intelligence/Machine Learning/Data Analytics and Internet of Things.

Semester 2
- Security Fundamentals and Development

Semester 2 & Semester 3
Service Learning

Year 4 - Choose a Specialisation

Year 4
Games Programming
Semester 1
- Project
- Cloud Application Development
- Games Systems

Semester 2
- Project
- Mixed Reality
- Games Programming
- Governance, Ethics, Security & Sustainability
- Metaverse

Semester 3
- Project

Year 4
Digital Business Transformation
Semester 1
- Project
- Cloud Application Development
- Business Analysis

Semester 2
- Project
- Business Process Automation
- Digital Transformation
- Governance, Ethics, Security & Sustainability
- Strategic Management

Semester 3
- Project

Year 4
Software Development Specialisation
Semester 1
- Project
- Cloud Application Development
- Secure Application Programming

Semester 2
- Project
- IoT Fundamentals & Development
- Governance, Ethics, Security & Sustainability
- DevOpsSec
- Blockchain

Semester 3
- Project

Year 4
Networking and Cloud Infrastructure
Semester 1
- Project
- Cloud Application Development
- Cloud Scale Infrastructure

Semester 2
- Project
- DevOpsSec
- Governance, Ethics, Security & Sustainability
- Software Defined Networks
- Cloud Security

Semester 3
- Project

Year 4
Cybersecurity Specialisation
Semester 1
- Project
- Cloud Application Development
- Secure Application Programming

Semester 2
- Project
- DevOpsSec
- Penetration Testing
- Governance, Ethics, Security & Sustainability
- Digital Forensics

Semester 3
- Project

Year 4
Artificial Intelligence/ Machine Learning/Data Analytics
Semester 1
- Project
- Cloud Application Development
- Statistics & Machine Learning

Semester 2
- Project
- Data Application Development
- Governance, Ethics, Security & Sustainability
- Applied Deep Learning
- AI & Sustainability

Semester 3
- Project

Availability of specialisations is subject to student numbers

Assessment
The course will be assessed with a blend of continuous assessments and/or project work and exams. Please note that in some instances exams may take place in the daytime, evenings and at weekends.