

MASTER OF SCIENCE IN CYBERSECURITY

FACTFILE

Delivery

Blended/Fully Online (Fully online delivery is subject to QQI validation). See page 4 for more information.

Application

Apply online at www.ncirl.ie

Part-time Schedule

Indicative Schedule

Two evenings per week, 18.00 - 22.00 and every second Saturday

Duration

2 years; 4 semesters

Start Date

Sept 2021

Fees

€4,475 per annum
€8,950 total fee
(Fees revised annually)

Full-time Schedule

Indicative Schedule

Students need to be available 09.00-18.00 Mon – Fri.
(Class days and times vary)

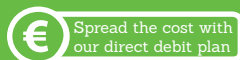
Duration

1 year; 2 semesters with a final internship

EU Fee

€6,500 total fee
(EU/Ireland applicants)
(Fees revised annually)

In accordance with our quality assurance processes, we conduct a full programmatic review of all our courses every 5 years. This current review may result in some changes to the content of this course starting in September 2021.



Course Description

Cybersecurity is an essential need for a modern society in which information technology and services pervade every aspect of our lives. Cybersecurity has the fastest growth rate among all areas of IT, with the labour market encountering a severe workforce shortage in this field.

The aim of this programme is to provide learners with essential expert technical knowledge, competence and research skills of the most important technical concepts of cybersecurity and how they are applied in emerging areas such as device security and forensics.

The course is technical and practical in nature, uniquely embedded in industry, and develops in-depth expertise of core technical topics within the area of cybersecurity such as information security, secure programming, network security, penetration testing, malware analysis, IT law and ethics, and technologies and tools that support application and service vulnerability detection, incident detection, data and log retrieval and analysis. The course also provides a sharper focus into forensics and cloud security through the two specialisations that are offered to the learners.

Who is the course for?

This course is ideal for ICT professionals or graduates with an honours degree in computing/computer science or in a cognate area (STEM) that wish to develop a career as a cybersecurity professional; to take a leading technical or managerial role; to progress faster in their employment or to apply the knowledge in their current role. Candidates who do not hold a computing degree and are currently working in the IT sector may be considered, based on relevant academic qualifications or extensive work experience.

As a graduate of this course you will be able to:

- Conduct independent research and analysis in the cybersecurity domain including secure application design, development and testing within a given context, e.g.; web, cloud computing, and forensic investigation.

- Demonstrate practical skills and expert knowledge of technologies and tools that support cryptanalysis, application and service vulnerability detection and patching, security incidents detection and log file analysis.
- Critically evaluate the design and implementation and evaluation of a research idea.
- Analyse and evaluate the legal, ethical and economic ramifications of developing secure applications and services.
- Communicate effectively to a range of audiences in both written and verbal media and undertake self-learning in order to acquire new knowledge.

Award and Progression

The Master of Science in Cybersecurity is awarded by QQI at level 9 on the National Framework of Qualifications (NFQ). Students who successfully complete this course may progress to a major award at level 10 on the NFQ. Students may also elect to exit early with a Postgraduate Diploma in Science in Cybersecurity at level 9.

Career Prospects

Several reports highlight the skills shortage in cybersecurity. The Bureau of Labour Statistics projects 36.5 percent employment growth for information and cybersecurity experts and analysts by 2022. This field has the fastest growth rate when compared with the rest of technology jobs.

The top 5 worldwide companies in this field are located in Ireland. Considering the high demand of various types of jobs in the cybersecurity domain that currently exist in the market, graduates from this course may work in the following roles: information security analyst, secure application developer, cybersecurity tester, risk advisory on information security and forensics, cloud security analyst, etc.

Entry Requirements

An honours (level 8) primary degree in computing or a cognate area with a 2.2 award or higher. Cognate area means a STEM (science, technology, engineering and mathematics) degree that also has taught programming/application development related modules. Candidates are expected to have programming ability. An assessment and/or interview may be

conducted to ascertain suitability if necessary for candidates who do not meet the normal academic requirements.

The college operates a Recognition of Prior Experiential Learning (RPEL) scheme meaning applicants who do not meet the normal academic requirements may be considered based on relevant work and other experience. This may be assessed using a portfolio of learning, demonstration of work produced, and an interview. The programming ability of the applicant will also be assessed.

Course Structure

The course offers two specialisations: Forensics and Cloud Security. Students must select one specialisation.

Laptop Requirements

This programme has a BYOD (Bring Your Own Device) policy. Specifically, students are expected to successfully participate in lectures, laboratories and projects using a portable computer (laptop/notebook) with a substantial hardware configuration. The minimal suitable configuration is 8GB of RAM (16GB are recommended); a modern 64-bit x86 multi-core 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 each student to ensure their computer is functioning correctly and that they have full administrator rights. NCI IT cannot provide support for these personal devices.

Some students may be able to avail of the Student Laptop Loan Scheme, subject to eligibility. See page 71 for more information.

COURSE CONTENT

Core Modules

- Security Fundamentals
- Secure Programming for Web
- Network Security and Penetration Testing
- IT Law and Ethics
- Research in Computing
- Cryptography
- Secure Programming for Application Development
- Malware Analysis
- Research Methods
- Internship

Forensics Specialisation

- Incident Response and Analytics
- Forensics and eDiscovery

Cloud Security Specialisation

- Cloud Security

