The course teaches students the computing fundamentals, complemented with detailed knowledge, problem-solving and specialised technical skills required for designing, developing and deploying software. The course offers specialisations in the second semester to choose from. The streams are Mobile Application Development, Cloud Computing, Software Development, Computing Infrastructure, Mobile Cloud Gaming, Internet of Things, Cybersecurity, and Software Quality and Testing. The stream element is a focused set of modules to bring you quickly to the industry entry standard for the chosen specialisation.

The streams (subject to availability) are:

The Internet of Things stream provides a through pathway from IoT novice to a graduate who can take up a key position in this rapidly expanding area. Learners will be imparted firm foundation knowledge of the technology which underlies the IoT and it is augmented by a highly practical project development and implementation.

The Cybersecurity stream provides detailed knowledge, problem-solving and specialised technical skills required for application security development, forensic investigation, application/service vulnerability detection and incident detection.

The Software Quality and Testing stream provides practical and specialised technical skills required for testing software at all levels of development. Semester two consists of a focused set of modules to bring the participants quickly to the industry entry standard for the Software Quality and Testing specialisation.

Who is the course for?
This course will appeal to graduates with a level 8 degree from different backgrounds who would wish to change their non-ICT qualification into the computer science field through a level 8 award in computing.

It will also appeal to technical and non-technical professionals who would like to upgrade their skills in one of the specialisations provided by this course, helping them to progress faster in their employment or to apply the knowledge in their current role.

Award and Progression
The Higher Diploma in Science in Computing is awarded by QQI at level 8 on the National Framework of Qualifications (NFQ). Students who successfully complete this course may be eligible to progress to a major award at level 9 on the NFQ.

As graduates from other disciplines and with work experience, learners will have life skills and experiences that they will bring with them on the programme and into a new subject domain. Therefore, they are eligible for a
number of roles. They could work in positions that are in-line with their skills but in the ICT sector, or apply ICT knowledge gained through this programme to their current role.

Graduates may also avail of entry-level ICT-related positions, depending on the selected stream, such as mobile application designer/developer; cloud application developer; cloud solutions architect; software developer; system and network administrator; IT infrastructure implementation, installation, support and helpdesk specialist; IoT software developer; entry-level cybersecurity engineer; cybersecurity tester; computer forensics examiner; software tester; quality assurance software tester; and test architect.

Entry Requirements
A level 8 degree or its equivalent in a non-cognate discipline. Non-standard applications will be also considered on an individual basis. 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 extensive relevant work and other experience. This may be assessed using a portfolio of learning, demonstration of work produced and interview.

Assessment
The course will be assessed with a blend of continuous assessments and/or project work and exams. This varies between modules but typically assessment is split 60:40 between exams and continuous assessment. Please note that in some instances exams may take place in the daytime and at weekends.

Semester 1
- Object Oriented Software Engineering
- Software Development
- Computer Architecture Operating Systems and Networks
- Introduction to Databases
- Web Design

Semester 2
Choose one of the streams laid out below:

Mobile Application Development Stream
- Fundamentals of Mobile Communication
- Multimedia and Mobile Application Development
- Advanced Mobile Application Development
- Server Side Development

Cloud Computing Stream
- Cloud Application Development
- Cloud Computing in Business
- Web Services and API Development
- Practical Operating Systems

Software Development Stream
- Data Structures and Algorithms
- Advanced Programming
- Web Services and API Development
- Server Side Development

Computing Infrastructure Stream
- Data Storage and Management
- Infrastructure Management
- Virtualisation
- Practical Operating Systems

Internet of Things Stream
- Internet of Things Principles
- Internet of Things Software Development
- Fundamentals of Mobile Communication
- Multimedia and Mobile Application Development

Cybersecurity Stream
- Security Principles
- Fundamentals of Secure Programming
- Penetration Testing
- Digital Forensics

Semester 3
- Project

Note: Elective streams will run subject to numbers.