



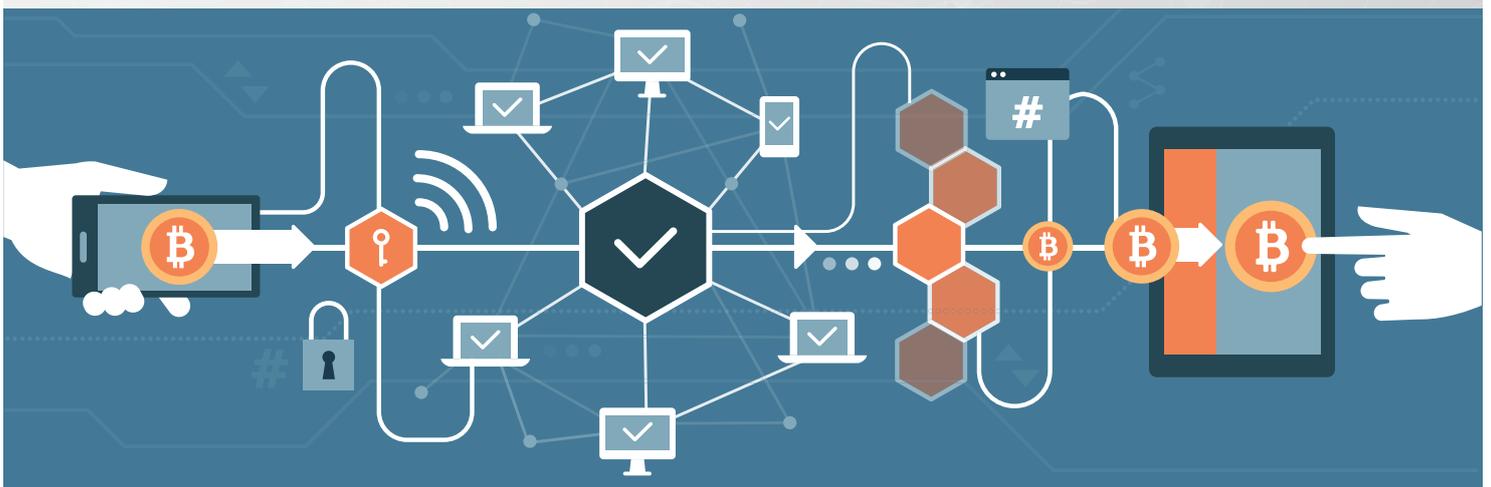
MSc in Computing (Blockchain – Distributed Ledger Technologies)

Blockchain is a rapidly growing technology with the potential to disrupt traditional practices across a wide range of industries. The lack of technical Blockchain skills is of national and international concern as it is a significant inhibitor to Blockchain adoption in companies across key industries including manufacturing, supply-chain, health, food, finance and the public sector.

With its roots in Bitcoin and crypto currencies, Blockchain technology provides a distributed non-repudiable ledger. It works on decentralised platforms and offers significant advantages for business operations in terms of transparency, elimination of third parties, cost reduction, micropayments, cryptographic security, and permanent transactions. Blockchain enhances the speed and transparency of transactions along complex supply chains while reducing costs. It optimises back and middle business processes and transactions, augmenting security, reporting and regulatory and compliance profiles.

**A Gartner study estimates
Blockchain will add \$3.1 trillion
in business value by 2030.**

IDA Ireland's Blockchain strategy aims to promote Ireland as a European location for Blockchain developments and in 2018, the Minister for Finance published a discussion paper examining the potential of virtual currencies and Blockchain technology. Working with Blockchain Ireland, the Technology Ireland ICT Skillnet has identified the skills gap for software developers with the requisite Blockchain knowledge and development skills and is co-funding this new MSc as a direct response to this need.



School of Computing at DCU

The School of Computing at Dublin City University is Ireland's largest Computer Science department and has earned a strong reputation for excellence in research and teaching. It is ranked in the top 200-250 Schools Globally for Computer Science. With close industry links the School's teaching and research programmes reflect the current and anticipated needs of Ireland's industrial and commercial sectors while at the same time meeting the most rigorous national and international academic standards.

Delivery

The course will be delivered part-time over two years, primarily online. Students will take eight core modules and also complete a Blockchain practicum in the second year which will account for one third of the marks for the award of the Masters Degree. During this practicum they may develop prototype Blockchain software systems to solve a real-world problem or analyse Blockchain subsystems and propose improvements. The projects, which may be sponsored by external clients or involve some of students' own ideas, will typically require feasibility studies followed by the creation of a project plan, and development of a Blockchain application or a rigorous theoretical analysis. While continuous assessment elements for the modules will be submitted electronically, there will also be end of term examinations for which attendance in person at DCU is required.



Who Should Apply

The course is aimed at IT professionals in employment in Republic of Ireland registered companies. To qualify for direct entry they must have a Level 8 Honours Degree (2.2) or higher in Computer Science, Computing, Computer Applications or a related discipline. Applicants without these entry requirements (e.g., Level 7 degree or lower than an Honours 2.2 in a Level 8 degree) may be considered if they can demonstrate previously obtained competence equivalent to the entry requirements.

Programme Structure and Content

While Blockchain technology is most commonly defined as a decentralised, distributed ledger used to record transactions across multiple computers, very importantly it is also seen as a distributed database that maintains a growing list (chain) of data transaction records. Thus, underlying Blockchain technology is being used to protect critical data from unauthorised access and modification.

Therefore, this new Masters course also takes into account the wider context of Blockchain associated computer security issues, specifically: Cryptography; Public Key Cryptography and Security Protocols. In addition there is strong linkage between Blockchain and cloud systems and technologies as one of the growing ways to implement and scale Blockchain is Blockchain-as-a-Service (BaaS). Accordingly underlying and advanced models in cloud computing are covered in a separate module.

Programme Structure¹



¹ Accurate at time of printing.

More detailed information may be obtained by sending a request to info@ictskillnet.ie.

How To Apply

Applications are now being accepted for a start in September with a closing date of 23rd July. In the first instance applicants should submit their CV directly to info@ictskillnet.ie. After initial screening applicants will be advised on next steps.

Technology Ireland ICT Skillnet is co-funded by Skillnet Ireland and member companies. Skillnet Ireland is funded from the National Training Fund through the Department of Education and Skills.



An Roinn Oideachais agus Scileanna
Department of Education and Skills

