

BSC (HONOURS) IN DATA SCIENCE

Duration:

Four Years
Full-Time

CAO Code:

NC025

CAO Points Guide:*

260

NFQ Level:

Level 8

SUSI

*This is a guide only, points vary each year.

About the Course

NCI's BSc (Honours) in Data Science is practical in nature, providing you with knowledge of the way data science can solve real problems and facilitate business decisions based on evidence. Due to the shortage of suitably qualified data science professionals in Ireland and internationally, this degree offers exceptional job prospects for graduates.

The course is industry-focused with options for students to gain real world experience through Service Learning, Work Placement or International Exchange (Erasmus) for work or study in the third year. NCI students are highly sought after and complete their work experience in companies such as Microsoft, Eir, AIB, Irish Life, Vodafone, Intel, Citi, SAP and Workday.

Graduates of this course can apply data transformation, modelling, data mining, and machine learning techniques to analyse and derive new knowledge and insights from data; design and implement data science algorithms and applications that solve real-world problems; effectively visualise and communicate the results of data analysis to support business decision-making; and adopt appropriate professional, ethical, legal, security, and privacy principles in relation to data science solutions.

Who is the course for?

This course will appeal to students who are interested in developing computing and numeracy skills and wish to pursue a career in data science. 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 from the BSc (Honours) in Data Science go on to work with a variety of organisations including multinationals, financial services and professional services companies. Related data science roles include data scientist, business intelligence analyst, customer insight lead, risk analyst, knowledge engineer, and data programmer.

Course Structure and Award

This four-year undergraduate course is run over eight semesters with continuous assessment held throughout and examinations at the end of each semester. On completion you will receive a QQI BSc (Honours) Degree in Data Science 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 Data Science, graduates can progress to postgraduate courses in computing at level 9 on the National Framework of Qualifications such as the MSc in Data Analytics, MSc in Cybersecurity, MSc in Cloud Computing, MSc in Open Data Practice, MSc in Fintech or the MSc in Artificial Intelligence at National College of Ireland.

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 O4/H7 must be obtained in Mathematics. A minimum of grade O6/H7 must be obtained in English or Irish. Applicants who have successfully completed the QQI Level 6 Software Development (6M0691) course may be eligible for advanced entry to year 2 of this programme. Further details are available on the NCI website. Mature applicants, applicants with a disability or those applying through the DARE or HEAR access schemes should refer to our Admissions section on p56, which also includes our admission policies, including laptop requirements. Please note that this course operates on a Bring Your Own Device (BYOD) basis from Year 3 onwards. Students are expected to successfully participate in classes using a portable computer (laptop/notebook) with a suitable hardware configuration.

Applicants from a PLC/further education course must meet the CAO points requirement, have a full level 5/6 award, and achieve one distinction. The distinction must be held in one of the following modules: B20029 or C20139 or C20174 or C20175 or N33029 or 4N2138 or 5N0554 or 5N0556 or 5N16654 or 5N1833 or 5N18396 or 5N2066 or 6N3395 (or O4/H7 in LC Mathematics).



"A major advantage to studying Data Science at NCI is the work placement module. I was lucky enough to complete my work placement with Dell Technologies as a Data Analyst Intern."

Niamh Daly
BSc Hons in
Data Science



COURSE CONTENT

Year 1

Semester 1

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

Semester 2

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

Year 2

Semester 1

- Advanced Databases
- Object Oriented Programming
- Data Programming
- Web Application Development
- Statistics I

Semester 2

- Innovation & Business Entrepreneurship
- Data Mining and Machine Learning
- Data Visualisation
- Linear Algebra
- Statistics II

Year 3

Semester 1

- Artificial Intelligence
- Advanced Machine Learning
- Data Architecture
- Data Warehousing & Business Intelligence
- Scalable Data Analytics

Semester 2

- Students will choose one of the following options:
- Work Placement
 - Academic Internship
 - Service Learning
 - International Exchange

Year 4

Semester 1

- Final Year Project
- Governance, Ethics, Security & Sustainability
- Neural Networks & Prescriptive Analytics
- Text Analytics & Natural Language Processing

Semester 2

- Final Year Project
- Applied Deep Learning
- IoT Real Time Analytics
- Time Series & Financial Analytics

