

# BSC (HONOURS) IN DATA SCIENCE

**Duration:** **CAO Points Guide:\***

Four Years  
Full-Time 260

**NFQ Level:** **CAO Code:**

Level 8 NC025



\*For each course we have given a guideline based on our points over the past three years. 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 a six-month work placement in the third year, which will significantly improve your skills and enhance your employability. NCI students are highly sought after and complete their work experience in companies like Microsoft, Eir, AIB, Irish Life, Vodafone, Intel, Citi, SAP and Workday.

Graduates of this course can apply data transformation, modelling, mining and machine learning techniques to analyse and derive new knowledge and insight from data; understand how to design and implement data science algorithms and applications that solve real-world problems; can effectively visualise and communicate the results of data analysis to support business decision making; and are able to 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 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.



"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

## 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 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 and above in two higher level subjects together with a minimum of O6 in four other subjects. A minimum of grade H5 must be obtained in Mathematics. A minimum of grade O6 must be obtained in English. Mature applicants, applicants with a disability or those applying through the DARE or HEAR access schemes should refer to our Admissions section on p63, which also includes our admission policies, including laptop requirements.

Applicants from a PLC/further education course must meet the CAO points requirement, have a full level 5/6 award, and achieve three distinctions. One 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 H5 in LC maths or NCI Maths Qualifying Exam).

**Please note:** NCI offers a mathematics qualifying exam for students who would like to pursue the BSc Honours in Data Science. This provides prospective students with a second chance or an alternative way to meet the required mathematics standard of H5 in Leaving Certificate Maths. To find out more and register for the exam see [www.ncirl.ie/data-science](http://www.ncirl.ie/data-science).



# COURSE CONTENT

## Year

### Semester 1

- Computational Thinking
- The Computing Industry
- Problem Solving and Programming Concepts
- Discrete Mathematics
- Introduction to Data Science

### Semester 2

- Introduction to Data Modelling and Databases
- Computing Systems
- Programming I
- Statistics I

## Year 2

### Semester 1

- Programming II
- Advanced Databases
- Data Visualisation
- Statistics II

### Semester 2

- Linear Algebra
- Data Mining and Machine Learning
- IT Project Management
- Programming III

## Year 3

### Semester 1

- Data Architecture
- Scalable Data Analytics
- Advanced Machine Learning

One elective from the following:

- Data Warehousing and Business Intelligence
- Artificial Intelligence

### Semester 2

- *Work Placement\**
- \*Full six months within an organisation

OR

- Academic Internship

## Year 4

### Semester 1

- Data Science Project

Two electives from the following:

- Systems Modelling, Simulation and Optimisation for Analytics
- Strategic Data Analysis
- Neural Networks and Prescriptive Analytics
- Text Analytics

### Semester 2

- Data Science Project
- Data Governance, Security and Ethics

One elective from the following:

- IoT Real Time Analytics
- Time Series and Financial Analytics
- Healthcare Analytics

Electives may include prerequisites, are subject to change, and availability is subject to class sizes.

