NATIONAL COLLEGE OF IRELAND

HIGHER CERTIFICATE IN **DATA SCIENCE**

Duration:
Two Years Full-Time

CAO Points Guide:*
200

NFQ Level:
Level 6

CAO Code:
NC105

SUSI

*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 Higher Certificate in Data Science uses a blend of computer science and data science to provide you with the knowledge and skills necessary to carry out data modelling, data management and data analysis activities, and to interpret and communicate that data to a variety of audiences.

The programme gives you the mathematics, programming and problem-solving skills required to exploit data in addressing real-world problems. You will also develop your problem solving, teamwork, critical thinking and communication skills.

Graduates of this course can identify, clean, integrate, select, transform, and mine different types of datasets with consideration of ethical, privacy and data protection issues, in order to summarise and present new knowledge; design, implement and document algorithmic solutions that demonstrate use of processes, methodologies, tools and techniques that solve known problems; and utilise statistical analysis, modelling, data mining and machine learning tools and techniques to analyse datasets.

Who is the course for?

This course will be particularly appealing to students who are unsure about enrolling in a degree programme initially and see the Higher Certificate as a progression route to a degree at a later stage. The course is for school leavers, mature students and graduates of QQI level 5/6 programmes.

Career Prospects

This course will equip you with the technical computer science and data science skills to build a successful career as a technician in the areas of computing, data management and data analysis.

Course Structure and Award

This two-year Higher Certificate course is run over four semesters with continuous assessment held throughout the course and examinations at the end of each semester. On completion, you will receive a QQI Higher Certificate in Data Science at level 6 on the National Framework of Qualifications.

Further Study Options

Upon successful completion of the Higher Certificate in Data Science, graduates can gain entry directly into year three of the BSc (Hons) in Data Science at NCI. Graduates can also progress to other programmes at level 7 or level 8 on the National Framework of Qualifications such as the BSc (Hons) in Computing at NCI.

Course Fees

This course qualifies under the Free Fees Initiative and Student Grant Scheme.

Admission Requirements and Policies

Minimum entry requirements are a grade of O6/H7 or above in five 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 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 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 Higher Certificate 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.

COURSE CONTENT

Year 1

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
- Data Analysis Project (elective)*
- Programming III (elective)*