NATIONAL COLLEGE OF IRELAND

MASTER OF SCIENCE IN
OPEN DATA PRACTICE

FACTFILE

€ Spread the cost with our direct debit plan
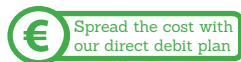
Full-time Schedule

Application
Apply online at www.ncirl.ie

Start Date
Jan 2025

Duration
1 year; 3 semesters with a final research practicum.

The 3 semesters run from Sept to Jan, Jan to May and May to August. The Research Practicum runs in the third semester.

Delivery
Campus: Classes will take place face-to-face on campus. Delivery will consist of lectures, tutorials, and project-based learning.

Indicative Timetable
Students need to be available 09.00-18.00 Mon – Fri. (Class days and times can vary)

EU Fee
€6,800 total fee
(Fees revised annually)

Course Description

Open Data is data that is openly accessible, exploitable, editable, and shared for any purpose. Open Data is a key driver for economic growth, business innovation and public accountability and this programme gives the learner the skills to succeed in a data driven world.

The MSc in Open Data Practice, developed under the EU-funded ERASMUS+ TrainRDM project, equips learners with skills to excel in a data-driven world. Graduates will gain expertise in open data management, impact assessment, and operationalisation. The collaboration with UPB and TU Vienna, two leading European institutions in computing, ensures a diverse and comprehensive education, preparing students for leadership in open data innovation and public accountability.

The programme was shortlisted for the prestigious Technology Ireland Industry Awards 2023 in the category of Outstanding Academic Achievement of the Year by IBEC, Ireland's largest business representative group.

Graduates will be able to:
• Conduct independent research and analysis in open data.
• Formulate and implement a novel research idea in the area.
• Demonstrate expert knowledge in managing and implementing open data solutions.
• Show high level competence in the tools and techniques of open data.
• Critically assess business and technical strategies for open data.
• Develop and implement effective business and technical solutions for open data.
• Critically appreciate ethical, data governance and sustainability issues relevant to open data practice.

You will attain expertise to be able to evaluate modelling techniques, use software development to solve problems involving data and to analyse and evaluate large data sets. You will also understand the ethical, moral and sustainability issues associated with open data practices. Towards the end of your studies, you will also examine a specific research question that can be relevant to your organisation in your research project.

As a graduate of this programme, you can lead the way in using data to drive business innovation, improve business efficiency, enhance public accountability, make better decisions, and solve real world challenges with open data. There is a strong and growing open data ecosystem and this course will give you the competence and confidence to be a leader in the field.

Who is the course for?

The programme is particularly relevant to those working or aiming to work in organisations engaged with managing open data resources, such as for example public sector organisations, researchers or those involved in data governance. Given the potential growth in this area the course is ideal for graduates that are looking to progress into the emerging open data and wider data analytics market to increase their employment potential. The course is suitable for graduates who have technical or mathematical problem-solving skills. Graduates from disciplines that have not developed these skills will need to be able to demonstrate an aptitude for technical or mathematical problem solving.

Career Opportunities

In 2020 the EU published the report titled, "The Economic Impact of Open Data", and this estimated the market size for open data would grow up to €334 billion by 2025. There were an estimated 1.09 million open data employees in the EU in 2019 with this estimated to grow up to 1.97 million by 2023. An analysis of the job market shows open roles in this area such as postdoctoral research fellow research librarians, data protection officer and data governance officer and opportunities in a variety of business and public sector organisations.
Ireland's National Open Data Strategy 2107-2022 further highlights the opportunity. The aim of this strategy is to make Ireland a leader in the use of open data and to create an environment where the economic, social, and democratic benefits of open data are recognised and realised. The strategy highlights the need to have suitably qualified graduates in this area to avail of the opportunities that exist. The need for skills in this area has been similarly recognised by governments around the world.

International Partners

This European MSc programme has been jointly designed by NCI, Universitatea Politehnica din București (UPB), and Technischen Universität Wien (TU Vienna), reflecting a robust European collaboration. The course is the culmination of the TrainRDM Project, an EU-funded initiative aimed at fostering open science education and skills. Faculty from UPB and TU Vienna will partake in programme delivery, enriching the curriculum with their expertise and international perspectives.

Entry Requirements

A minimum of a level 8 (honours degree) qualification (2.2 or higher) on the National Framework of Qualifications from a cognate/STEM background. Learners from a non-cognate background from areas like Bioscience, the Social Sciences, Psychology, or Library Science will also be considered for the programme. Candidates will be required to demonstrate numerical and computer proficiency which may be assessed by interview or written assessment. Graduates with other level 8 qualifications can apply and will be assessed on a case-by-case basis.

For candidates who do not have a level 8 qualification the college operates a Recognition of Prior Experiential Learning (RPEL) scheme meaning applicants who do not meet the normal academic entry requirements, may be considered based on relevant work or other experience. Non-English-speaking applicants must demonstrate fluency in the English language as demonstrated by an IELTS academic score of at least 6.0 or equivalent.

Award and Progression

The Master of Science in Open Data Practice is awarded by QQI at level 9 on the National Framework of Qualifications. Students who successfully complete this course may progress to a major award at level 10 on the NFQ. The diploma supplement for this degree will include a European endorsement from both Universitatea Politehnica din București and the Technischen Universität Wien. Students may also elect to exit early with the Postgraduate Diploma in Science in Open Data Practice at level 9 on the NFQ.

Laptop Requirements

This programme has a BYOD (Bring Your Own Device) policy. Specifically, students are expected to successfully participate in lectures, laboratories and projects using a portable computer (laptop/notebook) with a substantial hardware configuration. The minimal suitable configuration is 8GB of RAM (16GB are recommended); a modern 64-bit x86 multicore processor (Intel i5 or superior); 250+ GB of available space in hard disk; WiFi card; and a recent version of Ubuntu, macOS, or Windows. It is the responsibility of each student to ensure their computer is functioning correctly and that they have full administrator rights. NCI IT cannot provide support for these personal devices. Some students may be able to avail of the Student Laptop Loan Scheme, subject to eligibility.

Assessment

The course will be assessed with a blend of project work and exams. This varies between modules but typically assessment is 50% continuous assessment and 50% exam. Please note that in some instances exams may take place in the daytime, evenings and at weekends.

COURSE CONTENT

Semester 1

- Data Modelling
- Programming and Algorithms
- Ethics and Fairness
- Open Science and FAIR Principles

Semester 2

- Statistics
- Data Analytics
- Open Data Workflows and Lifecycle
- Plus a choice of one elective module from:
  - Database and File Systems
  - Open Innovation
  - Data Assurance and Security Principles

Semester 3

- Data Governance
- Research Practicum

Note: Elective modules are subject to availability and a minimum number of students required to run a module.