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\*National College of Ireland is now offering a limited number of funded places under the Springboard+ initiative, and the Human Capital Initiative (HCI) Pillar 1. All of these courses are available to eligible participants. There are eligibility conditions and requirements that must be met to obtain funding, please visit <https://springboardcourses.ie/eligibility> for more information.

## COURSES FOR JANUARY 2024

### ONLINE BLENDED DELIVERY\*

- Certificate in Science in Computing (1 Semester)
- Higher Diploma in Science in Computing (Software Development) (1 Year)
- Higher Diploma in Science in Computing (Software Development) (2 Years)
- Higher Diploma in Science in Computing (Web Development) (1 Year)
- Postgraduate Diploma in Science in Data Analytics (1 Year)
- Postgraduate Diploma in Science in Cybersecurity (1 Year)

All applications must go through  
[www.springboardcourses.ie](http://www.springboardcourses.ie)

For more information check out  
[www.ncirl.ie](http://www.ncirl.ie) or call 1800 221 721

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HIGHER EDUCATION AUTHORITY  
AN tUdaráis um Ard-Oideachas



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# Certificate in Science in Computing

## (Online Directed E-Learning Delivery) (1 Semester)



This is an online learning course that features Directed E-Learning activities such as live online classroom sessions and tutorials/videos on the College's e-learning system. This allows for online class time to be interactive, practical, and focused, with theory-based content being covered outside of class time with self-paced tutorials/videos, and practical content being covered in live online classes with support from lecturers and lab assistants. At certain limited and pre-scheduled times there will be opportunities for on-campus sessions. These on-campus sessions will also be dual delivered so students who do not wish to attend campus for these sessions will have the option of attending them online.

<b>Location:</b> Online	<b>Duration:</b> One semester, January to May 2024.
<b>Start Date:</b> The course is expected to start in the week commencing 22nd January 2024.	<b>Applications:</b> Apply online at <a href="http://www.springboardcourses.ie">www.springboardcourses.ie</a>
<b>Indicative Schedule:</b> Tuesday and Thursday 18.00 - 22.00.  There will also be three hours self-paced learning per week on NCI's Learning Platform weekly. This will not appear on your timetable.  Career Bridge classes will be delivered from 17.00 to 18.00 as per your timetable	<b>Fees:</b> A student contribution fee of €198 is applicable if you are in employment. No fees applicable if you are unemployed. The scheme does not cover any allowance for books and materials.  If a student contribution fee is applicable this must be paid in full no later than 8th March 2024.

### Course Description

This online course is ideal for non-technical individuals coming from different industry backgrounds who want to gain a good understanding of all the latest technologies and how to apply them to their businesses and sectors. It is flexibly delivered with guided videos and tutorials for you to watch and take time over during the week and then a live online class where you can discuss and learn from your lecturer and classmates. This programme gives you flexibility in how you study, an accredited qualification and a thorough understanding of key technology areas in 12 weeks of online delivery.

The course gives learners the fundamental computing knowledge needed to enter into the computing industry, or to progress on to further higher education courses. This course is designed with flexibility in mind, allowing learners to work through bespoke video content and guided tutorials during the week, with live online practical classes at the end of the week. Self-paced content is broken into small manageable chunks, and live sessions are designed for live questions and answers based around industry issues and practical problems. The core modules focus on Programming and Databases, specifically Java Programming and SQL. The course also offers two specialisations to choose from. Each specialisation element is a focused module designed to bring the learners quickly to the industry entry standard for the chosen specialisation. The specialisations (subject to availability) are:

- Computer Architecture Operating Systems and Networks
- Statistics

The Computer Architecture Operating Systems and Networks specialisation provides learners with the knowledge and skills to work with core computer systems. Learners will gain practical knowledge and skills in core areas of computing such as:

- VMware
- PowerShell
- CommandLine
- Windows OS
- Linux OS / Ubuntu
- Cloud Services (AWS / Azure)
- PC Hardware

The Statistics module will give learners the core skills needed to clean and analyse data using a variety of popular industry ready skills and tools such as:

- Data Analytics
- Descriptive Statistics
- T-Tests
- Probability
- SPSS/Excel

As graduates are from other disciplines and with work experience, learners will have life skills and experiences that they bring with them on to the programme and into a new subject domain. Therefore, they are eligible for a number of roles. They could work in positions that are in-line with their skills but in the ICT sector or apply ICT knowledge gained through this programme to their current role.

### Academic Entry Requirements

Learners who have a level 5 or higher awards in the areas of computing, computer science, IT etc., will be considered. For those without a computing background, a level 8 degree or its equivalent in any discipline is required. Applicants who do not meet the above criteria will also be considered on an individual basis. The college operates a Recognition of Prior Experiential Learning (RPEL) scheme meaning applicants who do not meet the normal academic requirements may be considered based on extensive relevant work and other experience. This may be assessed using a portfolio of learning, demonstration of work produced, and interview.

### 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 laptop computer with a substantial hardware configuration. A suitable configuration is 8GB of RAM (16GB are recommended); a modern 64-bit x86 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 the student to ensure their laptop is functioning correctly and that they have full administrator rights to the machine. NCI IT does not provide support for personal devices.

The course requires internet access you will be required to ensure you have sufficient broadband speed and reliable connectivity from your place of study.

*Free Laptop loan for eligible students on this course:* Students who are eligible for HEA funding for this course may also be eligible for a free laptop provided on a loan basis for the duration of the programme. This will be a suitable specification machine for completion of the programme but must be returned once you have finished your course. Overall numbers of laptops available are subject to maximum numbers and no other alternatives can be offered.

Check <https://www.ncirl.ie/Students/Student-Services/Support-Services/Student-Laptop-Fund> for updates on the next opening date for applications.

### Award and Progression

The Certificate in Science in Computing is awarded by QQI at level 8 on the National Framework of Qualifications (NFQ). Students who successfully complete this course may be eligible to progress to a major award at Higher Diploma or Masters level on the NFQ.

### Assessment

Please note in some cases exams and assessments may take place in the daytime, evening or weekends.

## Modules

- Software Development
- Introduction to Databases
- Computer Architecture Operating Systems and Networks (Elective)
- Statistics (Elective)
- Career Bridge

Electives will run subject to student demand.





# Higher Diploma in Science in Computing

(Online Directed E-Learning delivery) (With specialisation in Software Development)



The Software Development stream provides learners detailed knowledge, problem-solving and technical skills in the area of software development using a modern programming language, such as Java, and application development framework(s).  
2 Year or 1 Year options available.

## Online Directed E-Learning Delivery (2 Year)

This is an online learning course that features Directed E-Learning activities such as live online classroom sessions and tutorials/videos on the College's e-learning system. This allows for online class time to be interactive, practical, and focused, with theory-based content being covered outside of class time with self-paced tutorials/videos, and practical content being covered in live online classes with support from lecturers and lab assistants.

**Location:** Online

**Start Date:** The course is expected to start in the week commencing 22nd January 2024

**Indicative Schedule:** Tuesday and Thursday 18.00 - 22.00

Career Bridge classes will be delivered one day per week in Semester 2 from 17.00 to 18.00. Day to be confirmed.

There will be up to five hours self-directed learning through the college e-learning system weekly. These will not show on your timetable.

**Duration:** January to May 2024, September to December 2024, January to May 2025 and September to December 2025.

**Applications:** Apply online at [www.springboardcourses.ie](http://www.springboardcourses.ie)

**Fees:** A student contribution fee of €540 is applicable if you are in employment. No fees applicable if you are unemployed. The scheme does not cover any allowance for books and materials.

If a student contribution fee is applicable this must be paid in full no later than 8th March 2024.

## Online Delivery (1 Year)

Online classes will be live online with support from lecturers and lab assistants.

**Location:** Online

**Start Date:** The course is expected to start in the week commencing 22nd January 2024

**Indicative Schedule:** Tuesday, Thursday and Friday 18.00 - 22.00 and a number of Saturdays 09.00 - 18.00.

Career Bridge classes will be delivered one day per week in Semester 2 from 17.00 to 18.00. Day to be confirmed.

**Duration:** January to May 2024, May to August 2024 and September to December 2024.

**Applications:** Apply online at [www.springboardcourses.ie](http://www.springboardcourses.ie)

**Fees:** A student contribution fee of €540 is applicable if you are in employment. No fees applicable if you are unemployed. The scheme does not cover any allowance for books and materials.

If a student contribution fee is applicable this must be paid in full no later than 8th March 2024.

### Course Description

This course will appeal to non-technical professionals or graduates with a level 8 degree from different backgrounds who would like to upgrade their skills in the computing domain, helping them to progress faster in their employment or to apply the gained knowledge in their current role.

The course teaches students the computing fundamentals, complemented with detailed knowledge, problem-solving and specialised technical skills required for designing and developing technical software solutions.

The course offers a specialisation in Software Development, which brings the participants quickly to the graduate standard in this area. This course is designed with flexibility in mind, allowing learners to work through bespoke video content and guided tutorials the week before class, then polishing their knowledge with live online practical classes. Self-paced content is broken into small manageable chunks, and live sessions are designed for live questions and answers based around industry issues and practical problems.

The Software Development stream provides learners detailed knowledge, problem-solving and technical skills in the area of software development using a modern programming language, such as Java, and application development framework(s).

Depending on your delivery choice you will take Career Bridge as either classroom or blended online. It will help you to enhance your employability skills and improve your overall career prospects. Students will be assisted in identifying relevant employment or a placement during or within three months of completing their course.

Graduates may avail of many entry-level ICT-related jobs, such as software developer, web development engineer and software engineer.

**Note:** The prospective students are required to specify the specialisation they would like to follow when they apply for a place within the Higher Diploma in Science in Computing programme. It is not possible to transfer course streams post registration.

### Career Prospects

This course is designed to meet the needs of the IT sector and secure future employment for graduates. Companies who hired 2022 students include: Coinmaster (Customer Support Engineer), Deloitte (.net developer), Deloitte (Software Developer), Workday (Network Engineer), Workday (Quality Assurance Engineer), Datalex (Full Stack Software Engineer), Digitsoft (Software Engineer), Docusign (TS Engineer), AIB (Technology analyst), Amazon (Cloud Support Associate), Revenue (Data Analyst).

### Who is the course for?

This course will typically appeal to graduates with a level 8 degree from different backgrounds who would wish to change their non-ICT qualification into the computer science field through a level 8 award in computing. Nonetheless, it is noted that the course is technical in nature and will entail a significant amount of independent study. Given the content and the timescale you will need to have a strong commitment to the course and a willingness to fully engage with the technical content.

### Academic Entry Requirements

A level 8 degree or its equivalent in a non-cognate discipline. Non-standard applications will be also considered on an individual basis.

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 extensive relevant work and other experience. This may be assessed through a portfolio of learning, demonstration of work produced, interview and assessment.





### 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 laptop computer with a substantial hardware configuration. A suitable configuration is 8GB of RAM (16GB are recommended); a modern 64-bit x86 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 the student to ensure their laptop is functioning correctly and that they have full administrator rights to the machine. NCI IT does not provide support for personal devices

This course requires internet access you will be required to ensure you have sufficient broadband speed and reliable connectivity from your place of study.

**Free Laptop loan for eligible students on this course:** Students who are eligible for HEA funding for this course may also be eligible for a free laptop provided on a loan basis for the duration of the programme. This will be a suitable

specification machine for completion of the programme but must be returned once you have finished your course. Overall numbers of laptops available are subject to maximum numbers and no other alternatives can be offered.

Check <https://www.ncirl.ie/Students/Student-Services/Support-Services/Student-Laptop-Fund> for updates on the next opening date for applications.

### Assessment

The course will be assessed with a blend of continuous assessment and/or project work and exams. Please note that in some instances the exams may take place in the daytime, evenings and at weekends.

### Award and Progression

For all streams regardless of specialisation your final award will be a Higher Diploma in Science in Computing as awarded by QQI at level 8 on the National Framework of Qualifications (NFQ). Students who successfully complete this course may be eligible to progress to a major award at level 9 on the NFQ.

#### Software Development specialisation (Online Delivery) (1 Year)

##### Semester 1

- Software Development
- Object Oriented Software Engineering
- Introduction to Databases
- Web Design and Client Side Scripting

##### Semester 2

- Computer Architecture
- Operating Systems and Networks
- Data Structures
- Algorithms and Advanced Programming
- Distributed Systems
- Career Bridge

##### Semester 3

- Project

#### Software Development specialisation (Online Delivery) (2Years)

##### Year 1 Semester 1

- Software Development
- Web Design and Client Side Scripting

##### Year 1 Semester 2

- Object Oriented Software Engineering
- Introduction to Databases
- Data Structures
- Career Bridge

##### Year 2 Semester 1

- Computer Architecture
- Operating Systems and Networks
- Algorithms and Advanced Programming
- Distributed Systems

##### Year 2 Semester 2

- Project

Springboard Careers Advisors will proactively support you to find relevant employment during the course or following completion of the course.

Note: The prospective students are required to specify the specialisation they would like to follow when they apply for a place within the Higher Diploma in Science in Computing programme.

# Higher Diploma in Science in Computing



(With specialisation in Web Development) (Online Delivery) (1 Year)

This is an online learning course that features Directed E-Learning activities such as live online classroom sessions and tutorials/videos on the College's e-learning system. This allows for online class time to be interactive, practical, and focused, with theory-based content being covered outside of class time with self-paced tutorials/videos, and practical content being covered in live online classes with support from lecturers and lab assistants.

**Location:** Online

**Start Date:** The course is expected to start in the week commencing 22nd January 2024

**Indicative Schedule Evening:** Tuesday and Thursday 18.00 - 22.00

There will be up to five hours self-directed learning through the college e-learning system weekly. These will not show on your timetable.

Career Bridge classes will be delivered one day per week in Semester 2 from 17.00 to 18.00. Day to be confirmed.

**Duration:** January to May 2024, May to August 2024 and September to December 2024.

**Applications:** Apply online at [www.springboardcourses.ie](http://www.springboardcourses.ie)

**Fees:** A student contribution fee of €540 is applicable if you are in employment. No fees applicable if you are unemployed. The scheme does not cover any allowance for books and materials.

If a student contribution fee is applicable this must be paid in full no later than 8th March 2024.

## Course Description

This course will appeal to graduates with a qualification in another area but would like to bridge the gap into a career in ICT and to focus on the development of websites and web applications. The first semester will give you a solid grounding in the computing fundamentals allowing you to move in the second semester onto more specialist modules in the area of web development. The course provides the opportunity to work in a wide variety of IT roles or to apply web development skills to your current industry sector.

The course teaches students the computing fundamentals, complemented with detailed knowledge, problem-solving and specialised technical skills required for designing, developing and deploying software.

The course offers a specialisation in Web Development, which brings the participants quickly to the graduate standard in this area.

The Web Development stream provides learners with technical and development skills in core topics of web programming covering topics such as advanced client side development, cloud application development and DevOpsSec.

Note: The prospective students are required to specify the specialisation they would like to follow when they apply for a place within the Higher Diploma in Science in Computing programme. It is not possible to transfer course streams post registration.

## Career Prospects

Graduates from NCI's Higher Diploma in Computing programmes have progressed to successful roles in a wide variety of technical and non-technical roles. This web development specialisation opens up particular opportunities in a broad range of web development roles.

### Who is the course for?

This course will appeal to graduates with a level 8 degree from different backgrounds who would wish to change their non-ICT qualification into the computer science field through a level 8 award in computing. Nonetheless, it is noted that the course is technical in nature and will entail a significant amount of independent study. Given the content and the timescale you will need to have a strong commitment to the course and a willingness to fully engage with the technical content.

### Academic Entry Requirements

A level 8 degree or its equivalent in a non-cognate discipline. Non-standard applications will be also considered on an individual basis.

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 extensive relevant work and other experience. This may be assessed through a portfolio of learning, demonstration of work produced, an interview and assessment.

### 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 laptop computer with a substantial hardware configuration. A suitable configuration is 8GB of RAM (16GB are recommended); a modern 64-bit x86 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 the student to ensure their laptop is functioning correctly and that they have full administrator rights to the machine. NCI IT does not provide support for personal devices.

The course requires internet access you will be required to ensure you have sufficient broadband speed and reliable connectivity from your place of study.

*Free Laptop loan for eligible students on this course:* Students who are eligible for HEA funding for this course may also be eligible for a free laptop provided on a loan basis for the duration of the programme. This will be a suitable specification machine for completion of the programme but must be returned once you have finished your course. Overall numbers of laptops available are subject to maximum numbers and no other alternatives can be offered.

Check <https://www.ncirl.ie/Students/Student-Services/Support-Services/Student-Laptop-Fund> for updates on the next opening date for applications.

### Assessment

The course will be assessed with a blend of continuous assessments and/or project work and exams. Please note that in some instances exams



may take place in the daytime, evenings and at weekends.

### Award and Progression

For all streams regardless of specialisation your final award will be a Higher Diploma in Science in Computing as awarded by QQI at level 8 on the National Framework of Qualifications (NFQ). Students who successfully complete this course may be eligible to progress to a major award at level 9 on the NFQ.

#### Course Content (Online Delivery) (1 Year)

##### Semester 1

- Software Development
- Object Oriented Software Engineering
- Introduction to Databases
- Web Design and Client Side Scripting

##### Semester 2

- Computer Architecture Operating Systems and Networks
- Cloud Application Development
- Advanced Clientside Development
- DevOpsSec
- Career Bridge

##### Semester 3

- Project

Springboard Careers Advisors will proactively support you to find relevant employment during the course or following completion of the course.





# Postgraduate Diploma in Science in Data Analytics



## (Blended/Online Directed E-Learning) (1 Year)

This is a blended/online learning course that features Directed E-Learning activities such as live online classroom sessions and tutorials/videos on the College's e-learning system. This allows for online class time to be interactive, practical, and focused, with theory-based content being covered outside of class time with self-paced tutorials/videos, and practical content being covered in live online classes with support from lecturers and lab assistants. At certain limited and pre-scheduled times there will be opportunities for on-campus sessions. These on-campus sessions will also be dual delivered so students who do not wish to attend campus for these sessions will have the option of attending them online.

**Location:** Online (with limited classroom sessions)

**Duration:** January to May 2024, May to August 2024 and September to December 2024.

**Start Date:** The course is expected to start in the week commencing 22nd January 2024

**Applications:** Apply online at [www.springboardcourses.ie](http://www.springboardcourses.ie)

**Indicative Schedule:** Tuesday and Thursday 18.00 - 22.00.

**Fees:** A student contribution fee of €650 is applicable if you are in employment. No fees applicable if you are unemployed. The scheme does not cover any allowance for books and materials.

There will also be four hours self-paced learning per week on NCI's Learning Platform weekly. This will not appear on your timetable.

If a student contribution fee is applicable this must be paid in full no later than 8th March 2024.

Career Bridge classes will be delivered one day per week in Semester 2 from 17.00 to 18.00. Day to be confirmed.

### Course Description

This course aims to produce technically competent, innovative graduates that will become leading practitioners in the field of data analytics. Upon completion, graduates will be able to:

- Conduct independent research and analysis in the field of data analytics
- Demonstrate expert knowledge of data analysis and statistics, and the tools, techniques and technologies of data analytics utilised in both technical and business contexts
- Critically assess and evaluate business and technical strategies for data analytics
- Develop and implement effective business and technical solutions for data analytics
- Critically appreciate ethical and data governance issues relevant to data analytics

The course is designed to accommodate those with specific interests in data analytics, whether that may be of a more technically focused or a more business focused nature. All learners will also gain exposure to pertinent legal issues and ethical issues associated with the data analytics field.

Students will gain exposure to product commercialisation issues associated with data analytics. The course is delivered by faculty and practitioners using academic research, industry-defined practical problems, and case studies.

Students undertaking this course will be exposed to a variety of programming languages/tools that may include R, Python, SPSS, Excel, Weka and RapidMiner.

### Career Prospects

This course is designed to meet the ever-growing need for deep skills in Big Data/Analytics to fill a skills shortage in Ireland.

Companies who hired from 2022 graduates include: DTSQUARED (Data Management Consultant) Valeo (Data Management Lead), ESB (Data Analyst) SectoGMC (QA Manager), TedCastles Oil Products (Senior Business Analyst), Fidelity Investments (Senior Systems Analyst), MetLife Production (Management Analyst) Pernod Ricard (Marketing Analytics), DXC Technology (Data Analyst), Deloitte (Artificial Intelligence Consultant)

### Who is the course for?

This course is for graduates who have substantial technical, especially programming, and mathematical/statistical skills. Graduates from non-STEM disciplines (Science, Technology, Engineering, and Mathematics) that have not developed these skills will need to be able to demonstrate an aptitude for technical (programming) and mathematical problem solving.

### Academic Entry Requirements

Applicants are normally required to hold a minimum of a level 8 honours qualification (2.2 or higher) or equivalent on the NFQ in a cognate discipline. Candidates will be required to demonstrate technical or mathematical problem solving in previous learning. Graduates from programmes without embedded technical or mathematical problem solving will need to demonstrate these skills in addition to level 8 qualifications (via certifications, qualifications, certified experience and assessment tests). All applicants must evidence prior programming experience (e.g., via academic transcripts or recognised certification). Standard applicants are holders of technical, numerate degrees who are likely to gain a higher ranking in order of merit for admission to this programme. Normally, these would be applicants

who have gained a minimum of a Level 8 qualification in a numerate discipline, typically Computing or Informatics. Such applicants with a level 8 qualification (2.2 or higher) or equivalent are eligible for direct entry. Following computing graduates, we next assign priority to candidates with a background in engineering, mathematics, physics and chemistry. Consideration of these applications is by detailed examination of the content, assessments and syllabi of applicants' primary degrees. Such candidates may also be assessed by interview.

Additionally, applications will be considered for those with a minimum of a Level 8 qualification in a programme with a significant IT and/or numerate component which could include Management Information Systems, Accounting, Economics, Marketing Management, Sociology and Biology. Programmes in this category may vary greatly in mathematical and information technology content and applications would be assessed by detailed examination of programme content, assessments and syllabi. Candidates with qualifications in this category will be assessed by interview.

### 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 laptop computer with a substantial hardware configuration. A suitable configuration is 8GB of RAM (16GB are recommended); a modern 64-bit x86 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 the student to ensure their laptop is functioning correctly and that they have full administrator rights to the machine. NCI IT does not provide support for personal devices.

This course requires internet access. You will be required to ensure you have sufficient broadband speed and reliable connectivity from your place of study.

**Free Laptop loan for eligible students on this course:**

Students who are eligible for HEA funding for this course may also be eligible for a free laptop provided on a loan basis for the duration of the programme. This will be a suitable specification machine for completion of the programme but must be returned once you have finished your course. Overall numbers of laptops available are subject to maximum numbers and no other alternatives can be offered.

Check <https://www.ncirl.ie/Students/Student-Services/Support-Services/Student-Laptop-Fund> for updates on the next opening date for applications.

**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.

**Award and Progression**

Graduates of the Postgraduate Diploma in Science in Data Analytics are awarded an NFQ Level 9 qualification. You can optionally complete the additional 30 credits required to upgrade their qualification to the MSc in Data Analytics (Not included under Springboard+ - additional fee would apply).

**Course Content**  
(Blended/Online Delivery)  
(1 Year)

**Semester 1**

- Statistics for Data Analytics
- Database and Analytics Programming

**Semester 2**

- Data Mining and Machine Learning I
- Modelling, Simulation, and Optimization
- Business Intelligence and Business Analytics - *Elective Modules Group 1*
- Data Intensive Architectures - *Elective Modules Group 2*
- Career Bridge

**Semester 3**

- Data Mining and Machine Learning II
- Data Governance and Ethics
- Domain Applications of Predictive Analytics - *Elective Modules Group 1*
- Scalable Systems Programming - *Elective Modules Group 2*

Note: Electives are designed to allow students gain specialised knowledge in Data Analytics related areas. Electives may have dependencies, by picking a particular elective in Semester 2, students may restrict themselves to a single choice of elective in Semester 3. For the current suite of electives, dependencies are:

- *Elective Modules Group 1:*  
Business Intelligence and Business Analytics -> Domain Applications of Predictive Analytics
- *Elective Modules Group 2:*  
Data Intensive Architectures -> Scalable Systems Programming

Electives will run subject to learner demand. Learners will be asked to choose their specialisation before programme commencement.

Springboard Careers Advisors will proactively support you to find relevant employment during the course or following completion of the course.

Note that all modules count towards the final award classification.





# Postgraduate Diploma in Science in Cybersecurity



## (Blended/Online Directed E-Learning) (1 Year)

This is a blended/online learning course that features Directed E-Learning activities such as live online classroom sessions and tutorials/videos on the College's e-learning system. This allows for online class time to be interactive, practical, and focused, with theory-based content being covered outside of class time with self-paced tutorials/videos, and practical content being covered in live online classes with support from lecturers and lab assistants. At certain limited and pre-scheduled times there will be opportunities for on-campus sessions. These on-campus sessions will also be dual delivered so students who do not wish to attend campus for these sessions will have the option of attending them online.

**Location:** Online (with limited classroom sessions)

**Start Date:** The course is expected to start in the week commencing 22nd January 2024

**Indicative Schedule:** Tuesday and Thursday 18.00 - 22.00.

There will also be 4.5 hours self-paced learning per week on NCI's Learning Platform weekly. This will not appear on your timetable.

Career Bridge classes will be delivered one day per week in Semester 2 from 17.00 to 18.00. Day to be confirmed.

**Duration:** January to May 2024, May to August 2024 and September to December 2024

**Applications:** Apply online at [www.springboardcourses.ie](http://www.springboardcourses.ie)

**Fees:** A student contribution fee of €695 is applicable if you are in employment. No fees applicable if you are unemployed. The scheme does not cover any allowance for books and materials.

If a student contribution fee is applicable this must be paid in full no later than 8th March 2024.

### Course Description

Cybersecurity is an essential need for a modern society in which information technology and services pervade every aspect of our lives. Cybersecurity has the fastest growth rate among all areas of IT, with the labour market encountering a severe workforce shortage in this field.

The aim of this programme is to provide learners with essential expert technical knowledge, competence, and skills of the most important technical concepts of cybersecurity and how they are applied in areas such as device, network, cloud, web, and application security.

The course is technical and practical in nature, uniquely embedded in industry, and develops in-depth expertise of core technical topics within the cybersecurity area. The programme emphasises the development of technical and research skills in the cybersecurity area through analysis, investigation, requirements elicitation, problem solving, and teamwork. In addition, emphasis is placed on the study of the latest appropriate technology and techniques necessary for the cultivation of advanced investigative skills.

### Career Prospects

Several reports indicate a shortage of skills and strong demand for cybersecurity professionals. The Expert Group on Future Skills Needs identified cybersecurity as a high-growth area that requires significant support for skills development. The State of the Cybersecurity Sector in Ireland 2022 Report indicates that there are almost 500 companies offering cybersecurity services or have employees in internal cybersecurity roles, and 83% of companies expect to grow their cybersecurity team over the next 12 months.

This field has the fastest growth rate when compared with the rest of technology jobs. Considering the high demand of various types of jobs in the cybersecurity domain that currently exist in the market, graduates from this course may work in the following roles: information security analyst, secure application developer, cybersecurity tester, risk analyst / consultant, cyber incident responder, cloud security analyst, security researcher, etc.

### Who is the course for?

This course is ideal for ICT professionals or graduates with an honours degree in computing or in a cognate area (STEM) that wish to develop a career as a cybersecurity professional; to take a leading technical or managerial role; to progress faster in their employment or to apply the knowledge in their current role. Candidates who do not hold a computing degree and are currently working in the IT sector may be considered, based on relevant academic qualifications or extensive work experience.

As a graduate of this course, you will be able to:

- Critically assess and evaluate ethical, legal, privacy, sustainable, and governance issues associated with the management of data assets in the cybersecurity domain.
- Communicate effectively complex and advanced cybersecurity concepts to a range of audiences in both written and verbal media.
- Apply advanced security knowledge and utilise practical skills and technologies to design and implement cybersecurity solutions that address business and technical problems.

- Make decisions and address security requirements through analytical thinking, communication, and interaction.
- Analyse, identify, and document measures to address vulnerabilities, risks, weaknesses, and other safety aspects within a given cybersecurity context.
- Identify knowledge gaps and undertake self-learning to acquire new knowledge and meet the requirements of the rapidly developing and expanding cybersecurity industry.

### Award and Progression

The Postgraduate Diploma in Cybersecurity is awarded by QQI at level 9 on the National Framework of Qualifications (NFQ).

Students who successfully complete this course can optionally complete the additional 30 credits required to upgrade their qualification to the MSC in Cybersecurity (Not included under Springboard+, additional fee would apply).

### Academic Entry Requirements

An honours (level 8) primary degree in computing or a cognate area with a 2.2 award or higher. Cognate area means a STEM (Science, Technology, Engineering, and Mathematics) degree that also has taught programming/application development related modules. Candidates are expected to have programming ability, which can be demonstrated through transcripts, recognised certifications, and/or relevant work experience. An assessment and/or interview may be conducted to ascertain suitability if necessary, for candidates who do not meet the normal academic requirements.



The college operates a Recognition of Prior Experiential Learning (RPEL) scheme meaning applicants who do not meet the normal academic requirements may be considered based on relevant work and other experience. This may be assessed using a portfolio of learning, demonstration of work produced, and an interview. The programming ability of the applicant will also be assessed.

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.

### 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 laptop computer with a substantial hardware configuration. A suitable configuration is 8GB of RAM (16GB are recommended); a modern 64-bit x86 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 the student to ensure their laptop is functioning correctly and that they have full administrator rights to the machine.

NCI IT does not provide support for personal devices. It is the responsibility of each student to ensure their computer is functioning correctly and that they have full administrator rights.

### Free Laptop loan for eligible students on this course:

Students who are eligible for HEA funding for this course may also be eligible for a free laptop provided on a loan basis for the duration of the programme. This will be a suitable specification machine for completion of the programme but must be returned once you have finished your course. Overall numbers of laptops available are subject to maximum numbers and no other alternatives can be offered.

Check <https://www.ncirl.ie/Students/Student-Services/Support-Services/Student-Laptop-Fund> for updates on the next opening date for applications.

### Assessment

The course will be assessed with a blend of continuous assessments and/or project work and/or exams. This varies between modules but typically assessment is 40% continuous assessment and 60% project or exam. Please note that in some instances exams may take place in the daytime, evenings and at weekends.

## Course Content

(Blended/Online Delivery)  
(1 Year)

The course offers two specialisations: Forensics and Cloud Security. Learners must select one specialisation. Specialisations will only run due to student demand.

### Semester 1

- Security Fundamentals
- Data Governance, Ethics, and Sustainability
- Secure Web Development (Elective)
- Forensics and eDiscovery (Elective)

### Semester 2

- Network Security and Penetration Testing
- Cryptography and Blockchain
- Secure Application Development (Elective)
- Malware Analysis (Elective)
- Career Bridge

### Semester 3

- Cloud Architectures and Security
- AI/ML in Cybersecurity
- Business Resilience and Incident Management

Note that there are dependencies between secure development electives. To study Secure Application Development in semester 2, students must have studied Secure Web Development in semester 1. However, all students can elect to study Malware Analysis in semester 2.

Electives will run subject to learner demand. Learners will be asked to choose their specialisation before programme commencement.

Springboard Careers Advisors will proactively support you to find relevant employment during the course or following the completion of the course.

\*Note that all modules count towards the final award classification.

## APPLICATION AND ELIGIBILITY

### Why Choose NCI

NCI has over 70 years' experience working with part-time students. All programmes under Springboard+ are accredited by QQI, so they are recognised nationally and internationally.

The College provides a supportive environment and tailored facilities for students returning to education after a number of years. In particular for Springboard+ a dedicated programme leader will look after the organisation of your course and make sure all your needs are met.

All our programmes are practical and are delivered by industry experts.

We benefit from a convenient location with the LUAS just outside the door and we are minutes from Connolly Station. Career Bridge, Work Placement, industry based projects and a dedicated team of career development professionals will work with you to help you gain the most from your qualification and get back into the workforce, or develop your career.

### Laptop and Internet Access Requirements

- It is the responsibility of the student to ensure they have a computer device of sufficient specification to complete their course and adequate internet connectivity where appropriate
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In order for the above to be assessed, you will need to have fully completed any Springboard+ course you enrolled on in the past - i.e. have completed all assignments, received a final grade, and had your status updated to "Complete" by the course provider. Until then you will not be able to apply for another Springboard+ course. You should also note that priority will be given to applicants who are long-term unemployed and to those who have not taken a Springboard+ course before.

Unemployed applicants must be Department of Employment Affairs and Social Protection (DEASP) customers and in receipt of an eligible DEASP payment, signing for social insurance contribution credits or be previously self-employed to be eligible for a funded place on a Springboard+ programme.

More information can be found at 'Am I Eligible for a Springboard+ Course' at [www.springboardcourses.ie/eligibility](http://www.springboardcourses.ie/eligibility)

### Application

Please feel free to contact us on 1800 221 721 (Option 4) to enquire about an application. Alternatively you can email [springboard@ncirl.ie](mailto:springboard@ncirl.ie). We are not permitted to accept applications directly from candidates as all Springboard and ICT Skills applications must be made online through [www.springboardcourses.ie](http://www.springboardcourses.ie). Please note that all applicants must meet NCI's academic admission criteria for any courses and as per previous years all courses and specialisations run subject to numbers. Eligibility for funding does not infer eligibility for this course.

### Places Available:

Demand for these courses is expected to exceed the number of available places and places are limited. Priority in the awarding of places must be given to those who are long-term unemployed as well those who have not previously undertaken a Springboard+ course. Decisions are communicated through [www.springboardcourses.ie](http://www.springboardcourses.ie). If you do not meet the normal academic entry requirements please do not delay in applying as you may be required to submit additional documentation and/or participate in an interview. A cut-off date for applications will also apply and this will be posted on the [www.springboardcourses.ie](http://www.springboardcourses.ie) website when you make an application to NCI. This date is subject to change based on programme demand and programmes may close at any time without warning when capacity is reached.

Note: Programmes are available for study within Ireland only.

### Department of Social Protection Payments

We advise that all payment queries should be addressed to your local Intreo, Social Welfare Office to confirm continuation of a Social Protection payment.

More information can be found at 'Social Protection FAQs' [www.springboardcourses.ie/faq](http://www.springboardcourses.ie/faq)

### Course Funding in the Event of Obtaining a Job

Should you obtain a job during your course of study the funding will remain in place for the duration of your course. The timing of the classes is aimed to allow people to work and study at the same time. If you do gain employment during the course please contact us to see how we can best facilitate you completing your course. If you do not qualify under Springboard+ you may apply directly to National College of Ireland for our fee paying courses at [admissions@ncirl.ie](mailto:admissions@ncirl.ie)

### For Further Information Contact

Tel: 1800 221 721 (Option 4)  
Web: [www.ncirl.ie](http://www.ncirl.ie)  
Email: [springboard@ncirl.ie](mailto:springboard@ncirl.ie)



# Career Bridge

## Part of the NCI Careers & Employability Service

NCI Career Development & Employability Office won the AHECS “Excellence in Employability Award” for 2013, 2014, 2016, 2018, 2020 (Highly Commended) and The Education Awards 2021 for Career Impact Strategy.



### Career Bridge

Part of the success of your Springboard course to meet your career goals is the Career Bridge module which is integrated into your programme. Practical career management classes take place in your 2nd Semester one day a week between 5 p.m. and 6 p.m. In addition, employer events relevant to your course and career are organised throughout the year of your studies. This module is designed to complement the technical skills of your course and provide you with the skills employers seek such as identifying your strengths and addressing skills gaps, developing your online and offline brand, networking effectively and managing your career path.

### What Career Bridge will offer you:

- Individualised career counselling and development.
- Individualised, strategic career planning addressing advancement and transition.
- Professionalised, targeted CVs and high impact applications.
- Expert interview coaching.
- Career networking and personal branding strategies.
- Practical skills workshops and one to one consultations.
- Online effective career resources available 24/7.
- Access to the NCI Weekly Vacancy newsletter and the LinkedIn Group Tech Network for Students and Graduates for jobs and events

The NCI Career Development and Employability office works in partnership with employers to support students in both identifying and achieving their future ambitions. Our career service has won the National AHECS award for Employability for 5 out of the last 9 years.

### The partnerships with employers are in the form of:

- Interview marathons
- Sector-specific mock interviews with key employers
- Targeted On-Campus Careers Fair
- Alumni networking events
- Technical and whiteboard simulations
- Employer presentations
- Skill- and competency-focused workshops

Career Bridge, similar to the other modules on the programme, will have learning outcomes relevant to your career aspirations.

### Employment and Placement

We work proactively and collaboratively with you and industry partners to obtain relevant employment during or within 3 months of completing your course. A graduate or entry level position, or indeed relevant employment acts as the work placement requirement. If a work placement is required, your Careers Advisor will actively support you in identifying a suitable work placement through your network.

Active engagement with your Careers Advisor and with the Career Bridge module markedly increases the likelihood of a successful career transition or progression. We look forward to working with you to realise your career goal.



# What springboard students say...

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I really like the fact that the college offers a service to help you find work after you're finished your course. The classes help you to build an employable version of yourself and the personal help you get improves your chances of getting a job.

*Student of HDip in Science in Computing (Software Development)*

Career Bridge is a great resource to have in the college. Even though you won't feel like using it until the second semester, it's a really good idea to engage with the service early on to take advantage of the services they offer. All in all, highly recommended...

*Barry, Postgrad in Data Analytics*

The student must be proactive and take accountability for their own job search and if they do the staff in the careers section are genuinely fantastic.

*Student of HDip in Science, Data Analytics*

Thanks to a great career advisor, ..... I was able to get on the internship within the IT company and at the end of the internship was offered a job in that company.

*Joanna, HDip in Science in Web Technologies*

The course was really enjoyable and the emphasis on careers rather than just exam results sets NCI apart from any other institutions I've attended.

*Student of HDip in Science in Computing (Software Development)*

Students should develop themselves technically but also awareness of what prospective employers look for should help you adapt your approach to a job application accordingly.

*Student of HDip in Science in Computing (Cloud stream)*

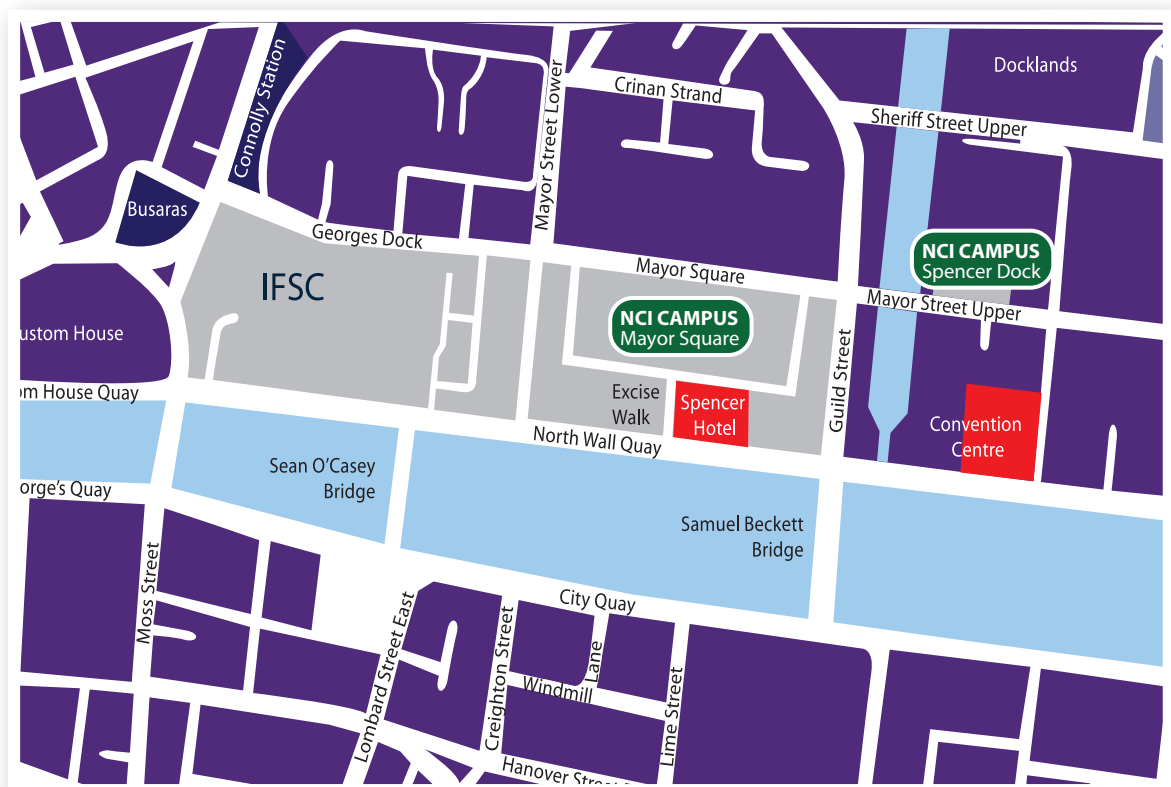
Participate in full. The course is very rewarding and there is great support. NCI listens and is willing to change if things are not working out. Career Bridge is excellent and you should attend the classes even if you have a solid job.

*Toby, HDip in Science Data Analytics*

I believe that it was this kind of integration between course and career guidance that led to my success at NCI. I was a gardener by trade and now I'm a Software Test Automation Engineer in Java. I get well paid and now I have a well-paid career ahead of me

*Robert, Software Development graduate*

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## **ONLINE OPEN EVENING**

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**Thursday the 11th of January  
5 – 7pm**

## **ONLINE TASTER CLASS FOR HIGHER DIPLOMAS**

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**Monday the 27th of November  
6 – 8pm**

National College of Ireland  
Mayor St., IFSC, Dublin 1

Tel: 1800 221 721 (then select option 4)  
Web: [www.ncirl.ie](http://www.ncirl.ie)  
Email: [springboard@ncirl.ie](mailto:springboard@ncirl.ie)