



Course Summary: January 4, 2025

Computer Science with Industrial Placement (Game Engineering) BSc Honours

- UCAS code: **G451**
- Full time
- 4 years

This Game Engineering BSc includes an industrial placement, giving you practical work experience and boosting your CV.

You are currently viewing course information for entry year: **2025**

Next start date:

- September 2025

Fees (per year)

- Home: **Not set**
- International: **£30600**

Entry requirements and offers

- A-Level: **AAB**
- IB: **34 points**

[View contextual offers](#)

UCAS Institution name and code:

- NEWC / N21

Course overview

This degree extends our [Computer Science \(Game Engineering\) BSc](#) degree by a year. This extra year is for your paid industrial placement year.

During your course, you'll spend a year working in the industry. Put your learning into practice and gain experience in a working environment. This will be an accredited and paid industry placement during Stage 3.

You'll learn to design, develop and use computer graphics software on different platforms, including game consoles and advanced 3D reality environments.

We'll focus on the design, development and implementation of software that drives computer games, including:

- gaming simulations
- computer game development

In your first two years, you'll study a broad Computer Science curriculum. You'll learn about problem-solving, program design and implementation.

In your final year, after your placement, you'll learn more about game engineering and study more specialised modules.

Your course and study experience - disclaimers and terms and conditions

Please rest assured we make all reasonable efforts to provide you with the programmes, services and facilities described. However, it may be necessary to make changes due to significant disruption, for example in response to Covid-19.

View our [Academic experience page](#), which gives information about your Newcastle University study experience for the academic year 2024-25.

See our [terms and conditions and student complaints information](#), which gives details of circumstances that may lead to changes to programmes, modules or University services.

Additional information

Flexible degree structure

All our Computer Science students study the same modules for the first two years. Once you have a good foundation, you'll specialise later in your course. This means you can transfer between our degrees, until the end of your second year.

Quality and ranking

Professional accreditation and recognition

All professional accreditations are reviewed regularly by their professional body.

Modules and learning

Modules

The information below is intended to provide an example of what you will study.

Most degrees are divided into stages. Each stage lasts for one academic year, and you'll complete modules totalling 120 credits by the end of each stage.

Our teaching is informed by research. Course content may change periodically to reflect developments in the discipline, the requirements of external bodies and partners, and student feedback.

Optional module availability

Student demand for optional modules may affect availability.

Full details of the modules on offer will be published through the [Programme Regulations and Specifications](#) ahead of each academic year. This usually happens in May.

To find out more please [see our terms and conditions](#)

Learn about the fundamentals of Computer Science. There's an emphasis on developing your skills in program design and implementation.

You'll get experience in Java programming, develop your problem-solving skills, and get a broad view of hardware and software architectures.

During this year, you'll get an insight into what it's like working in the digital sector.

Modules

Compulsory Modules	Credits
Fundamentals of Computing	20
Computer Systems Design and Architectures	20

Foundations of Data Science	20
Programming Portfolio 1	30
Programming Portfolio 2	30

You'll study modules in software engineering, algorithm design and the fundamental principles that govern the operation of the internet.

We'll introduce you to requirements analysis and databases, and the formal specification of software systems.

You'll also work in a team to engineer a substantial software product, developing practical teamwork skills.

Modules

Compulsory Modules	Credits
Security Programming	20
Algorithm Design and Analysis	10
Software Engineering Team Project	30
Introducing Contemporary Topics in Computing	30
Software Systems Design and Implementation	30

Between Stages 2 and 4, you'll spend a year on an approved work placement. You'll also complete a compulsory module.

Modules

Compulsory Modules	Credits
Intercalating Module for Computing Science Programmes	120

In your final year, you'll start to specialise in Game Engineering. You'll study computer game programming, graphical representation, and the latest artificial intelligence techniques. You'll learn to create immersive and realistic games and experiences.

Modules

Compulsory Modules	Credits
Major Project and Dissertation in Computer Science	60
Graphics for Games	10
Gaming Technologies and Simulations	20
Optional Modules	Credits
Distributed Systems	10
Introduction to BioDesign and Natural Computing	20
Biomedical Data Analytics and AI	20
Cryptography	10
System and Network Security	20
Fault Tolerant and Cyber-Physical Systems	20
Human Computer Interaction: Interaction Design	20
Computer Vision & AI	20
Data Visualization and Visual Analytics	10
Career Development for final year students	20

Information about these graphs

We base these figures and graphs on the most up-to-date information available to us. They are based on the modules chosen by our students in 2023-24.

Teaching time is made up of:

- scheduled learning and teaching activities. These are timetabled activities with a member of staff present.
- structured guided learning. These are activities developed by staff to support engagement with module learning. Students or groups of students undertake these activities without direct staff participation or supervision

Teaching and assessment

Teaching methods

Teaching methods include:

- Lectures, including guest lectures from visiting professionals
- tutorials from our expert staff
- supervised practical work, which will account for most of your time
- project work to help you develop real-world business skills, such as teamwork and project management

During your project work in Stage 2, you'll work as a team to develop a software product.

In Stage 3, you'll work on a major individual project and a dissertation.

Assessment methods

You'll be assessed through a combination of:

- Coursework
- Dissertation or research project
- Examinations – practical or online
- Group work

- Practical sessions
- Presentations
- Projects

Skills and experience

Business skills

In addition to your academic work, employers look for evidence of skills and experience. Our degrees have been created with industry needs in mind.

In Stage 2, you will gain a realistic preview into industry life, being taught in a team environment with real-life industry briefs. You will pick a problem, identified by industry, and develop a project to find a solution. The projects are marked by industry representatives, lecturers and the project sponsor.

Opportunities

Industrial placement year

Your paid placement year takes place in Stage 3 and provides you with the experience of seeking and securing a job. You'll also gain practical experience, key business skills and industry contacts that will benefit your academic study and longer-term career.

We assess your placement by a short report and presentation, though the assessment will not count towards your final mark.

Facilities and environment

Facilities

You'll be part of the [School of Computing](#), based in the Urban Sciences Building on our Newcastle Helix campus.

This brand new £58m building offers great facilities for our students, including:

- cyber-physical systems laboratory
- decision theatre for data visualisation
- flat floor teaching facilities
- 315 PCs with a Raspberry Pi3 on every desk

The building and the surrounding area is becoming a living laboratory, underpinning research to make urban centres more sustainable for future generations.

The Newcastle Helix is an innovation district in the heart of Newcastle-upon-Tyne.

Research across the Newcastle Helix focuses on:

- cyber-physical systems
- infrastructure
- smart grids
- future of our city
- big data

Support

To help you with academic and personal issues during your course, you'll have the support of an academic staff member. They'll be your **personal tutor** throughout your studies.

Our peer mentors will help you adjust to life at university during your first year. Our peer mentors are fellow students who can help you settle in and answer any questions you might have.

Your future

Join a network of successful graduates

Recent graduates have taken the following roles after graduation:

- game programmer at Coconut Lizard
- artificial intelligence programmer at Ubisoft
- graduate software developer at Accenture
- trainee audio programmer at Creative Assembly

Preparing you for career success

In the present job market, computing science graduates are better placed than many others to obtain employment in a challenging and fulfilling career, and the employability of Newcastle graduates is particularly high.

An increasing number of employers require digital skills, meaning our graduates are highly sought after. They move into bespoke software development roles in software houses and computer manufacturers and also into corporate organisations that use computers on a larger scale, such as banking, insurance and manufacturing companies and public sector institutions.

Benefit from strong industry links

As a hub for games development, the North East of England is an exciting place to kick-start your career and you'll benefit from strong links with companies such as:

- Epic (Fortnite)
- Activision (Call of Duty)
- Ubisoft (Assassins Creed)
- Rockstar North (Grand Theft Auto)
- TT Games (Lego Star Wars)
- Creative Assembly (Total War)
- NVidia (graphics cards)
- Sony (Horizon Zero Dawn)
- Microsoft Playground Games (Forza)
- Microsoft Ninja Theory (Devil May Cry)
- Rebellion (Judge Dredd)

You can also gain work experience with local businesses. Many local businesses approach our School to advertise short, part-time or voluntary work opportunities.

Careers support

We want all our students to succeed in their careers. That's why we've designed our courses to give you the skills employers are looking for. You can also go to guest lectures from industry professionals, mock interviews, and professional skills workshops.

Every year, the school hosts a week of career events. In the past, these have included:

- hackathon workshops
- placement discussions
- coding and enterprise challenges
- employer talks
- networking events

Our award-winning Careers Service is one of the largest and best in the country, and we have strong links with employers. We provide an extensive range of opportunities to all students through our ncl+ initiative.

[Visit our Careers Service website](#)

Recognition of professional qualifications outside of the UK

From 1 January 2021 there is an update to the way professional qualifications are recognised by countries outside of the UK

[Check the government's website for more information.](#)

Find out more...

- Go online for information about our full range of degrees:
www.ncl.ac.uk/undergraduate
- To watch videos about student life in Newcastle, visit
www.ncl.ac.uk/lovenewcastle
- Visit **www.ncl.ac.uk/tour** to take virtual tours of the campus and city
- Book for an Open Day to come and see us in person
www.ncl.ac.uk/openday
- Contact us online at **www.ncl.ac.uk/enquiries** or phone +44 (0)191 208 3333

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www.ncl.ac.uk/pre-arrival/regulations

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