

Course Summary: March 27, 2026

Physics MPhys Honours

- UCAS code: **F303**
- Full time
- 4 years

Explore the fundamental laws of the universe, from sub-atomic particles to astrophysics. This degree includes an integrated Master's year.

You are currently viewing course information for entry year: **2026**

Next start date:

- September 2026

Tuition fees (Year 1)

- Home: **£9,790**
- International: **£31,500**

Entry requirements and offers

- A-Level: **AAB**

- IB: **34 points**

UCAS Institution name and code:

- NEWC / N21

Undergraduate Open Day

Start your university journey. Find where you belong. Friday, June 26 (9:00-16:00)

Saturday, June 27 (9:00-16:00)

[Book your place now](#)

Course overview

Our Physics MPhys degree extends our [Physics BSc](#) by a year.

This extra year is for your integrated Master's. Our MPhys provides a deeper understanding of advanced physics concepts and includes an extended project.

Compared to our Physics BSc, this Masters degree offers more in-depth study in the final year. You'll also complete an extended project, performing research level investigations with academic staff.

You'll gain hands-on experience in our high-spec facilities, developing your practical skills.

By the end of your degree, you'll have a strong understanding of physics and advanced mathematics. You'll be prepared for a range of careers in research, industry, and beyond.

Flexible degree structure

Our flexible degree structure allows you to tailor your studies. All students follow the same curriculum in Stage 1, and begin to specialise in Stage 2. You can transfer between Physics disciplines until the end of Stage 1. You can also switch between the BSc and MPhys of your chosen discipline until the end of Stage 2:

- [Physics MPhys](#)
- [Theoretical Physics MPhys](#)
- [Physics with Astrophysics MPhys](#)

You'll graduate with an accredited degree and an interdisciplinary skillset in-demand with employers. This course is also ideal for someone interested in pursuing research or further study in physics or mathematics.

BSc or MPhys?

Physics is offered at two levels:

- [three-year Bachelor of Science \(BSc\)](#)
- [four-year Master of Physics \(MPhys\)](#)

Our MPhys degree has an extra year of advanced study at Master's level. You'll study more advanced topics and work on an extended project. You'll learn about research methodology and work with experts in their field.

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 2025-26.

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.

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](#)

During your first year, you'll study introductory modules in physics and mathematics. You'll also spend some time in the lab working on experiments.

Modules

| Compulsory Modules | Credits |
|--------------------------------------------------|----------------|
| Introductory Algebra | 10 |
| Introductory Calculus and Differential Equations | 20 |
| Multivariable Calculus | 10 |
| Dynamics | 10 |
| Introductory Astrophysics | 10 |
| Introductory Electromagnetism | 10 |
| Introductory Quantum Mechanics | 10 |
| Laboratory Physics 1 | 20 |
| States of Matter, Waves & AC Theory | 20 |

You'll continue learning about the core concepts of physics, including quantum mechanics and electromagnetism. This stage also includes a module in laboratory and professional skills in physics.

Modules

| Compulsory Modules | Credits |
|-------------------------------------------------|----------------|
| Principles of Quantum Mechanics | 10 |
| Vector Calculus | 10 |
| Differential Equations, Transforms and Waves | 10 |
| Principles of Electromagnetism | 10 |
| Principles of Materials and Solid-State Physics | 10 |
| Laboratory and Professional Skills in Physics | 20 |
| Thermodynamics & Statistical Mechanics | 20 |
| Scientific Computation with Python | 10 |

Astronomy with Data 20

During this year, you'll study more advanced modules and work on a team project.

You'll choose multiple optional modules.

Modules

Compulsory Modules Credits

Advanced Quantum Mechanics 10

Quantum Information 10

Relativity and Fundamental Particles 10

Variational Methods and Lagrangian Dynamics 10

Advanced Materials and Solid-State Physics 10

Atoms, Molecules, and Nuclei 10

Team Project 10

Classical Fields 10

Experimental Physics for Industrial Applications 10

Optional Modules Credits

Fluid Dynamics I 10

Mathematical Biology 10

Individual Project 20

Cosmology 10

High Energy Astrophysics and Black Holes 10

In your final year, you'll gain a deeper understanding of physics. These modules have a large research focus. You'll also work on an extended research project

with one of our research staff.

Modules

| Compulsory Modules | Credits |
|--------------------------------------------------------|----------------|
| General Relativity | 20 |
| Quantum Fluids | 20 |
| Extended Project - MPhys Physics | 60 |
| Quantum Information and Quantum Modelling of Materials | 20 |

Teaching and assessment

Teaching methods

You'll be taught via a range of approaches, including:

- lectures and seminars
- small group tutorials
- problem classes
- laboratory sessions
- practical computing sessions

In Stage 1, you'll work on experiments and projects in our labs. These practical sessions will be about 45 hours in total.

Assessment methods

You'll be assessed through a combination of:

- Assessments
- Examinations – practical or online
- Projects
- Reports

Skills and experience

Practical experience

This degree will give you practical skills that can be applied across a wide range of industries. You'll also develop highly valued attributes such as:

- problem-solving
- time management
- resilience
- the ability to meet deadlines

Using our high-spec facilities, and working alongside our expert staff, you'll:

- gain experimental experience in our state-of-the-art laboratories
- work on lab and project-based modules, based on real-world challenges
- develop analytical and computational skills, using industry-relevant software
- enhance your written and oral communication skills
- learn from experts in the field at a leading Russell Group university

Business skills

Physics graduates are highly valued for their transferable skills. You'll graduate with strong abilities, including:

- problem-solving
- a logical, analytical mindset
- big data analysis
- communication
- teamwork

Research skills

In your final year, you'll work on an extended research project. You'll work with one of our research staff, learn about research methodology and carry out the project in a research environment.

We have an interdisciplinary approach to research. Our academic staff are experts in their field, with a diverse range of research strengths.

We have research expertise in:

- novel electronic materials
- semiconductor devices
- nanoscale properties of materials
- computational physics
- quantum fluids
- quantum matter
- observational astrophysics
- astrophysical fluids
- cosmology
- quantum gravity

[Research areas in the School of Mathematics, Statistics and Physics](#)

Student stories

Scott, Theoretical Physics graduate, shares the highlights of his course, why he chose Newcastle, and advice for new students.

[Read about Scott's experience studying Physics BSc](#)

Opportunities

Study abroad year

Experience life in another country by choosing to study abroad as part of your degree. You'll be encouraged to embrace fun and challenging experiences, make connections with new communities and graduate as a globally aware professional, ready for your future.

You can choose to spend up to a year studying at a partner institution overseas. Our overseas partner institutions include:

- Universiteit Leiden, Leiden, Netherlands
- Technisches Universität München, Munich, Germany
- Institut National Des Sciences Appliquées De Rennes, Rennes, France
- Lappeenranta University of Technology, Lappeenranta, Finland
- Humboldt-Universität zu Berlin, Berlin, Germany

There are also lots of options in North America, Australia and Asia, including:

- State University of New York (SUNY) Buffalo, Buffalo, USA
- University of New South Wales, Sydney, Australia
- Hong Kong University of Science and Technology, Clear Water Bay, Hong Kong
- National University of Singapore, Singapore
- University of Florida, Florida, USA
- San Jose State University, California, USA
- Korea University, Seoul, South Korea
- National Taiwan Normal University, Taipei, Taiwan

During your time studying abroad, you will select from a range of modules offered by your host university. Alongside taking some subject-relevant modules, you will be given greater flexibility to choose modules from different disciplines (eg Languages, Business)

If you choose to study abroad, it will extend your degree by a year.

[Find out more about study abroad](#)

Short-term global opportunities

During your degree, you can take part in short-term global opportunities in locations such as:

- USA
- Cyprus

- Hong Kong
- Singapore
- Sri Lanka

The activities range from four days to eight+ weeks, and include:

- summer schools
- internships
- volunteering
- experiential learning

Funding is available to support students who want to participate.

Work placement

Apply your practical skills, increase your confidence and gain real-life work experience to accelerate your career. Take a 9-12-month industrial placement in the UK or abroad. Work placements usually take place in stage 3 of your studies and extend your degree by one year.

[Find out more about work placements.](#)

Facilities and environment

Facilities

As a physics student at Newcastle University, you'll be based at our city-centre campus in the [School of Mathematics, Statistics and Physics](#)' Herschel Building.

The school has high-specification laboratory facilities equipped with leading experimental and computational physics capabilities, as well as access to world-class telescopes and space missions, such as:

- cryogenics labs
- semiconductor labs
- High-Performance Computing
- data from the Vera Rubin Telescope
- dark lab
- NASA's Kepler/K2, TESS
- JWST space telescopes ESA's PLATO space mission

The Herschel Building also has dedicated study and social spaces, and a computing area.

[Find out more about our facilities, including a 360 tour](#)

Support

We take your health and wellbeing seriously and are committed to supporting you throughout your studies so you can fulfil your potential at university. This support includes:

- a personal tutor who is an academic member of staff who can help you with academic and personal issues throughout your degree
- a peer mentor scheme which pairs you with a current student from your course to help you navigate your first year at university
- a staff-student committee, to give you an opportunity to have a say in how your degree works

- Student Wellbeing Advisors who can offer comprehensive listening and support and signpost you to other University support services or external support agencies

Transition team

A dedicated member of the team will be there to support you as you move from school to university study.

The Transition Officer works with Year 1 undergraduates to provide:

- Year 1 pastoral and academic support
- weekly drop-ins
- training sessions on report writing and professionalism

You'll also benefit from our:

- induction programme, including social events, to help you settle in quickly
- activities and events run by our student-run society, [PhysSoc](#)
- peer supported academic drop-in sessions to help with assignments

Your future

Graduating with a degree in physics

Our graduates have gone on to work as:

- project scientists
- solutions engineers
- data analysts
- financial services consultants
- postdoctoral researchers

Employability is embedded throughout your degree, with opportunities to connect with alumni and employers each year. All physics students are invited to attend the annual WRIPA Physics Careers Fair, a major event that brings together employers actively seeking physics graduates.

Our graduates are well-prepared for careers in research and academia, but many also move into fast-growing and diverse sectors in the North East and beyond, including:

- advanced materials and semiconductors
- defence
- energy transition, infrastructure and electrification
- fibre-optics and communications
- space, satellite technology, and earth observation

In addition, physics graduates are highly valued in a range of other fields such as:

- accounting
- banking and financial services
- data analytics
- energy: nuclear and offshore
- engineering: consulting and manufacturing
- IT and software development
- management consultancy
- NHS medical physics
- teaching
- telecommunications

- traffic and transport management
- utilities, including the water sector

Many of our students also go on to further study, including teacher training or PhD programmes in physics and related disciplines.

Our links with industry

The Department of Physics has extensive research and alumni links with leading companies and external organisations. These connections help inform our teaching and support student networking and career development opportunities.

Our industry links include:

- BBC
- Cosm (Digistar)
- De Beers
- Engineering and Physical Sciences Research Council (EPSRC)
- European Southern Observatory (ESO)
- European Space Agency (EUCLID Space Observatory)
- FreeAgent
- Intel
- Johnson Matthey
- Jumping Rivers
- James Webb Space Telescope (JWST)
- Met Office
- Mind Foundry
- National Audit Office
- National Space Centre
- NICD
- Northern Gas Networks
- Oliver Wyman
- Phase Photonics
- Science and Technology Facilities Council (STFC)
- Vera C. Rubin Observatory (LSST)

Make a difference

Careers support

Our 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

If you're studying an **accredited degree** and thinking about working in Europe after you graduate, the best place to find current information is the [UK Government's guidance on recognition of UK professional qualifications in EU member states](#). This official resource explains whether your profession is regulated in another country, what steps you need to take, and which organisation you should contact.

Additional information

Advice on maths and physics requirements

If you don't think you will have the exact mathematics and science qualifications referred to in our entry requirements by the time you need them, you may not be sure what to do.

- If you have a maths qualification but will not have it at A Level (or equivalent) when you start your degree, you should apply for the relevant degree with Foundation Year. We may give you the opportunity to take the Newcastle University Pre-Entry Maths Course* and the option to start

in Year 1 if we think that this will be the best route for you.

- If you have A Level Maths (or equivalent) already but not at the required grade, you should contact us for advice. We may decide that you could be considered for Foundation Year entry, or it may be that this course is not the best option for you.
- If you will not have the equivalent of an A Level in the science subject (if any) required, you should apply for the relevant degree with Foundation Year.

If you are still not sure, don't worry. Whatever you apply for, our Admissions Tutors will help you decide which is the best route for you. They may, therefore, make you an offer for a different course from the one you apply for (eg Foundation Year entry instead of Year 1 entry).

Find out more...

- Go online for information about our full range of degrees:
www.ncl.ac.uk/undergraduate
- Watch videos about student life in Newcastle by visiting our YouTube channel at **www.youtube.com/@newcastleuni**
- Watch a virtual tour of our campus at
<https://youtu.be/vJUfHcqB7l8?si=8lUrf7kTxXbgdfr1>
- 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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<https://www.ncl.ac.uk/student-welcome/student-contract/>

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