



University  
of Glasgow

# PHYSICS & ASTRONOMY UNDERGRADUATE STUDIES 2020

**WORLD  
CHANGERS  
WELCOME**



ONE OF THE  
TOP 100  
UNIVERSITIES  
IN THE  
WORLD

ESTABLISHED  
IN 1451

250+  
CLUBS AND  
SOCIETIES

FOUR-YEAR  
DEGREE  
PROGRAMMES  
OFFERING  
FLEXIBILITY  
& CHOICE

JOINT 1ST IN  
THE RUSSELL  
GROUP FOR  
STUDENT  
SATISFACTION  
(NSS 2018)

28,000  
STUDENTS  
FROM  
OVER 140  
COUNTRIES

GLASGOW  
IS ONE OF  
THE TOP TEN  
BEST CITIES  
IN THE WORLD  
(TIME OUT 2019)

UNESCO  
CITY OF  
MUSIC

95.9% OF  
STUDENTS IN  
EMPLOYMENT  
OR FURTHER  
STUDY SIX MONTHS  
AFTER GRADUATION  
(DLHE 2016/17)

Ranked 2nd  
in Scotland for  
Physics &  
Astronomy

Complete University Guide 2020



## Visit us

Our Open Days give you the chance to chat to our friendly staff and students, attend subject-specific presentations, visit our student residences and explore our beautiful campuses.

### Open days

If you're interested in visiting the University before you apply for a specific programme, we'd be happy to welcome you to one of our Open Days held in June, September and October.

### Offer Holders' Day

Once you have applied to and received an offer from the University, you will get another chance to visit us on our Offer Holders' Day in the spring of 2020.

### Other opportunities to visit

You are welcome to join one of our campus tours at any time during the year.

You can also plan your own visit to the University at a time that suits you.

For more information see [glasgow.ac.uk/visitus](http://glasgow.ac.uk/visitus).

### How to apply

If you're seeking full-time study you must apply through the Universities & Colleges Admissions Service (UCAS). See [ucas.com](http://ucas.com) or call on **0371 468 0468** or **+44 330 3330 230** if you live outside of the UK.

### Ask a student

Chat to one of our current students about what life is like at Glasgow. See [glasgow.ac.uk/askastudent](http://glasgow.ac.uk/askastudent).

# ASTRONOMY

Astronomy is the study of the physical universe, from the Earth and the solar system to galaxies at the edge of the cosmos.

90%

Astronomy/Physics students were satisfied overall†

## What you will need

### Degrees and UCAS codes

BSc (Hons): Four years

MSci: Five years

Astronomy can only be taken as a Joint Honours degree.

### Entry requirements

Entry requirements for this programme are published in the University's *Undergraduate Prospectus 2020*.

You can also see [glasgow.ac.uk/undergraduate/entryrequirements](http://glasgow.ac.uk/undergraduate/entryrequirements) for detailed entry information, including additional subject-specific entry requirements, for

- A-levels
- SQA Highers and Advanced Highers
- International Baccalaureate
- International qualifications.

## Why choose Glasgow?

Astronomy lectures are complemented by our observatory, planetarium and telescope facilities.

## What to expect

### Programme structure

#### Year 1

You will survey the observable universe on all scales – from planets through stars and galaxies to cosmology – and gain a basic understanding of the core theoretical and observational principles of modern astronomy. Typical topics include: dynamical and positional astronomy, observational astronomy, the solar system, the stars, compact objects, and galaxies and cosmology.

You will also study other subjects in years 1 and 2.

#### Year 2

You will study key aspects of astronomy and astrophysics in greater depth and undergo further training in the use of astronomical instrumentation and software. Typical topics include: theoretical astrophysics, observational astrophysics, stars and their spectra, and relativity and cosmology.

#### Years 3, 4 and 5

If you progress to Honours (years 3 and 4) Astronomy can only be taken as a Joint Honours degree with either Physics or Mathematics. In Honours your studies will include modern observational methods and you will undertake project work using advanced astronomical instrumentation and data analysis techniques. Your core courses will be supplemented by options enabling you to follow your particular areas of interest. All courses include training in transferable skills such as teamwork, presentation and technical writing.

There is an opportunity to take an MSci degree, which explores astronomy topics in greater depth and includes an individually supervised project working at the cutting edge of international research.

### Our international links

Our staff have strong international links across a wide range of research fields. Many of our staff play leading roles in major international research projects, such as NASA's solar orbiter mission and the worldwide collaboration searching for gravitational waves. You will have the opportunity to undertake part of your degree abroad.

### Career prospects

The scientific knowledge and mathematical and analytical skills you acquire will equip you to work across a wide range of industries. Many of our graduates choose to continue their studies for a higher degree such as an MSc or a PhD in a specialised area of astronomy, or a related subject, before entering the job market.

### Accreditation

This degree programme is accredited by the Institute of Physics.

# CHEMICAL PHYSICS

Chemical physics is concerned with electrons, nuclei, atoms and molecules in all states of matter, and how they interact with their environment. This degree programme covers the area in which chemistry and physics overlap.

Accredited by the Institute of Physics

## What you will need

### Degrees and UCAS codes

BSc (Hons) (F335): Four years

MSci (F322): Five years

MSci with work placement (F320): Five years

### Entry requirements

Entry requirements for this programme are published in the University's *Undergraduate Prospectus 2020*.

You can also see [glasgow.ac.uk/undergraduate/entryrequirements](http://glasgow.ac.uk/undergraduate/entryrequirements) for detailed entry information, including additional subject-specific entry requirements, for

- A-levels
- SQA Highers and Advanced Highers
- International Baccalaureate
- International qualifications.

## Why choose Glasgow?

You will learn how to understand the laws of physics so that you can apply the latest technologies to control molecules and make new materials.

## What to expect

### Years 1 and 2

Initially you will study chemistry, physics and mathematics. In the following year you will study chemistry and physics.

### Years 3, 4 and 5

If you progress to Honours (years 3 and 4) you will study:

- in physics: a range of courses including quantum mechanics, thermal physics, solid state physics, waves and diffraction, electromagnetism, nuclear and particle physics, and atomic systems.
- in chemistry: various aspects of physical and inorganic chemistry including catalysis, solid state chemistry, coordination chemistry, quantum mechanics and symmetry, spectroscopy, thermodynamics and diffraction.

You will gain an in-depth knowledge of chemistry, physics, mathematics and computing, and will be able to tackle most problems in chemistry and physics. In the final year, you will work closely with a member of staff on a research project.

You can take Chemical Physics as an MSci degree, which may include an additional placement year. This is normally spent doing research in industry or some other organisation such as a research institute like CERN or an academic laboratory. Placements may be in the UK, but are often taken overseas. They happen between third year and the final year of the degree.

### Our international links

The Schools of Chemistry and Physics and Astronomy have strong international links across a wide range of research fields.

### Career prospects

Our graduates are employed in industry, commerce, government research and education. Many graduates proceed to research leading to a higher degree.

Some of our recent graduates have been employed by EDF Energy, Quotient Clinical, Reckitt Benckiser, Sterling Medical Innovation, and Synergy Outsourcing, among many other companies.

### Accreditation

These programmes are accredited by the Institute of Physics.

† Data published by Unistats (unistats.ac.uk), January 2019

# PHYSICS/ THEORETICAL PHYSICS

Physics is the experimental and theoretical study of matter and energy and their interactions, ranging from the domain of elementary particles, through nuclear and atomic physics, to the physics of solids and, ultimately, to the origins of the universe itself.

## What you will need

### Degrees and UCAS codes

Physics BSc (Hons)  
(F300): Four years

Physics MSci  
(F301): Five years

Theoretical Physics BSc (Hons)  
(F344): Four years

Theoretical Physics MSci  
(F340): Five years

 Joint Honours available.

### Entry requirements

Entry requirements for this programme are published in the University's *Undergraduate Prospectus 2020*.

You can also see [glasgow.ac.uk/undergraduate/entryrequirements](http://glasgow.ac.uk/undergraduate/entryrequirements) for detailed entry information, including additional subject-specific entry requirements, for

- A-levels
- SQA Highers and Advanced Highers
- International Baccalaureate
- International qualifications.

### Glasgow International College

For international students entry to this programme is supported by courses from GIC.

## Why choose Glasgow?

Many of our staff play leading roles in major international research projects, such as the Large Hadron Collider at CERN and the gravitational wave observatory LIGO.

100%

BSc Physics students were satisfied overall†

## What to expect

### Year 1

You will gain a basic understanding of the core topics in theoretical physics, receive an introduction to the methods of experimental physics and obtain a solid foundation for further study of the subject. Topics will include dynamics, wave motion, properties of matter, thermal physics, optics, electricity and magnetism, and quantum physics.

You will also study other subjects in years 1 and 2.

### Year 2

You will undergo training in more specialised experimental techniques and expand your awareness of the latest developments in modern physics research. Topics will include physics of waves, dynamics, physics of solids, thermal physics, electricity and magnetism, nuclear and particle physics, physics of optics, and mathematical techniques.

### Years 3, 4 and 5

If you progress to Honours (years 3 and 4) you will continue to study in greater depth core topics spanning all areas of physics, explore a range of specialist topics of your choice, and undertake project work, often within a world-leading research group.

An important aspect of the Physics degree programmes is the emphasis on technological applications such as laser physics, semiconductor physics and devices, modern signal processing technology, and magnetic and superconducting materials. If you choose the Theoretical Physics degree you will focus on more advanced theoretical topics. Additionally, you will undertake specialised computational project work.

There is an opportunity to take an MSci degree, which explores physics topics in greater depth and includes an individually supervised project working at the cutting edge of international research.

### Our international links

You will have the opportunity to apply to study abroad. There are currently two options available: the Erasmus+ Programme and the International Exchange Programme.

### Career prospects

Employment prospects for physics graduates are very good. The scientific knowledge and mathematical and analytical skills you acquire will equip you to work across a wide range of industries including aerospace, electronics, semiconductors, petroleum, communications, computing, medical physics, education, commerce and the civil service – both in scientific and administrative areas.

### Accreditation

All programmes containing physics are accredited by the Institute of Physics.

# PHYSICS WITH ASTROPHYSICS

In this degree programme the study of physics is particularly focused on astrophysical phenomena: from stars and planets to galaxies and cosmology. Astrophysics provides a natural laboratory in which to explore the laws of physics, and in certain astrophysical objects – such as pulsars, quasars and black holes – to test those laws under extreme conditions.

90%

Physics students in work/study six months after finishing†

## What you will need

### Degrees and UCAS codes

BSc (Hons) (F3F5): Four years  
MSci (F3FM): Five years

### Entry requirements

Entry requirements for this programme are published in the University's *Undergraduate Prospectus 2020*.

You can also see [glasgow.ac.uk/undergraduate/entryrequirements](http://glasgow.ac.uk/undergraduate/entryrequirements) for detailed entry information, including additional subject-specific entry requirements, for

- A-levels
- SQA Highers and Advanced Highers
- International Baccalaureate
- International qualifications.

### Glasgow International College

For international students entry to this programme is supported by courses from GIC.

## Why choose Glasgow?

Astronomy lectures are complemented by our observatory, planetarium and telescope facilities.

## What to expect

### Year 1

You will gain a basic understanding of the main topics in theoretical physics and will be introduced to the methods of experimental physics, thereby providing a solid foundation for further study in physics.

You will also study other subjects in years 1 and 2.

### Year 2

You will have training in more specialised experimental techniques and expand your knowledge of modern physics research. You will also be introduced to the foundations of astrophysics, covering topics including the physics of our solar system, the origin of stars and galaxies, and the evolution of the universe.

### Years 3, 4 and 5

If you progress to Honours (years 3 and 4) you will continue to study core topics in greater depth but will also study specialist subjects of your choice in depth and will undertake project work, often within a world-leading research group.

The main astrophysics components of the Honours programme include:

- stellar structure and evolution
- high-energy astrophysics
- galaxies and cosmology
- instruments for optical and radio telescopes
- exploring planetary systems.

There is an opportunity to take an MSci degree which explores physics and astrophysics topics in greater depth. In the final year of the MSci degree you will carry out an individually supervised project working at the cutting edge of international research. The MSci aims to foster the development of critical judgement and independent scientific work, and to prepare you for professional leadership in your chosen field.

### Our international links

You will have the opportunity to apply to study abroad. There are currently two options available: the Erasmus+ Programme and the International Exchange Programme.

### Career prospects

Our graduates are employed in many areas including industry, national research laboratories, the financial sector and education. Many graduates choose to study for a postgraduate degree before entering the job market.

### Accreditation

All programmes containing physics are fully accredited by the Institute of Physics.

† Data published by Unistats (unistats.ac.uk), January 2019

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# CONNECT WITH US



@UofGlasgow

Discover our world changers at  
[glasgow.ac.uk/worldchangers](https://glasgow.ac.uk/worldchangers)

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Glasgow G12 8QQ

General Switchboard  
Tel: +44 (0)141 330 2000

[glasgow.ac.uk/enquirenow](https://glasgow.ac.uk/enquirenow)

## WHO WILL YOU BECOME?

Every effort has been made to ensure the accuracy of the information contained within this leaflet at the time of publication. Information is subject to alteration without notice.

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