Physics & Astronomy
Undergraduate study
One of the world’s top 1% universities

Come and visit us

Open days and student visits
www.glasgow.ac.uk/visit

We offer many opportunities for you to visit us and find out about the University.

• 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.

• Applicants’ Visit Day:
Once you have applied to and received an offer from the University, you will get another chance to visit us on our Applicants’ Visit Day in March.

• Afternoon visits: If you can’t make either of the above we will be running three afternoon visits throughout the course of the year.

• Plan your own visit: You are welcome to visit the University at a time that suits you, to gather information and see the sights of our beautiful campus in your own time.

How to apply
www.ucas.com
You must apply through the Universities & Colleges Admissions Services (UCAS), tel: 0871 468 0468 or visit their website.

The Glasgow experience

The University of Glasgow is one of the world’s top universities. Since opening our doors over 550 years ago, we’ve dedicated our time to inspiring great minds throughout history, from the father of economics, Adam Smith, to the pioneer of television, John Logie Baird.

Here are just a few reasons why our students choose to join us:

• Established in 1451, fourth oldest University in the English-speaking world
• 23,000 students from 130 countries
• Member of the prestigious Russell Group of leading UK research universities
• 1st in the Russell Group for student satisfaction (International Student Barometer 2012)
• One of the UK’s top 3 best-value universities (Student Value for Money Report 2012)
• In the UK’s top 6 for career prospects (The Guardian University Guide 2013)
• Over 100 clubs and societies, from karate to student theatre
• Two student unions with GUU being voted UK Student Union of the Year
• One of the best libraries in Europe, open 361 days of the year from 7.15am–2am with 2.5 million print books and journals.

Find out more about the Glasgow experience:

• Get our students’ views on campus life: www.glasgowgen.net
• Chat to one of our current students: www.glasgow.ac.uk/studentnetwork
• Email us direct: student.recruitment@glasgow.ac.uk
Astronomy

Astronomy is the study of the physical universe, from the Earth and the solar system to galaxies at the edge of the cosmos. Astronomers observe the universe across the entire electromagnetic spectrum, and indeed beyond.

93%

Physics & Astronomy students were satisfied overall

Data published by Unistats (onistats.direct.gov.uk) January 2013.

Programme structure

Year 1
In first year 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 courses include: Dynamical and positional astronomy, Observational astronomy, The solar system, The stars, Compact objects, and Galaxies and cosmology.

You will also study two other subjects of your choice in year 1 – www.glasgow.ac.uk/ug/aboutdegrees.

Year 2
In second year you will study key aspects of astronomy and astrophysics in greater depth and undergo further training in the use of optical and radio telescopes.

Typical courses include: Theoretical astrophysics, Observational astrophysics, Stars and their spectra, and Relativity and cosmology.

You will also study one or two other subjects in year 2 – www.glasgow.ac.uk/ug/aboutdegrees.

Years 3, 4 and 5
If you successfully complete the courses in years 1 and 2, you may progress to Honours (years 3 and 4). Astronomy can only be taken as a Joint Honours degree with either Physics or Mathematics – it cannot be taken as a Single Honours degree.

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. In the final year of the MSci degree you will carry out an individually supervised project, working at the cutting edge of international research.

Special feature
Astronomy lectures are complemented by our observatory, planetarium and telescope facilities. We have close links with the Glasgow Science Centre, home to one of the UK’s best planetariums.

Partnership and industry links
The University is part of the Scottish Universities’ Physics Alliance (SUPA), a group of eight university physics and astronomy departments which aims to place Scotland at the international forefront of research in physics and astronomy.

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 the Large Hadron Collider at CERN 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 could find you working 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.

You may also be interested in
• Chemical Physics
• Physics/Theoretical Physics
• Physics with Astrophysics

Degrees
BSc (Hons) – four years
MSci – five years

Accreditation
This degree programme is accredited by the Institute of Physics.

Joint Honours
Astronomy can only be taken as a Joint Honours degree – it cannot be taken as a Single Honours degree.

See www.glasgow.ac.uk/ug/astronomy for a full list of Joint Honours combinations and UCAS codes.

Entry requirements
BSc, MSci
Highers: AAAA or AAABB (including two science subjects) in first sitting = unconditional offer.

Applicants who achieved AAAB or AABBB (including two science subjects) at their first sitting WILL receive an offer from the University. This offer may be conditional (on second sitting results) or unconditional, depending on how many applications are received from students who have attained these grades.

Additional offers, either conditional or unconditional, MAY be made to applicants who achieved between ABBB and AABB (including two science subjects) at their first sitting. A decision re these applications will be made in March 2014 once all applications have been reviewed.

Applicants who receive an offer conditional on second sitting results will be required to study Advanced Highers in relevant subjects as an integral part of their conditional offer.

A-levels: AAB, including Mathematics and preferably one other science subject and GCSE Physics at B.

IB: A minimum of 34 points is required to be considered for an offer. Actual offers will specify subjects and grades to be attained at Higher Level.

For a full list of alternative qualifications please see www.glasgow.ac.uk/undergraduate/entryrequirements.

E: astronomy-ugadmissions@glasgow.ac.uk
W: www.glasgow.ac.uk/ug/astronomy
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.

Programme structure

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.

We 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 & 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.

You may also be interested in
- Chemistry
- Chemistry with Medicinal Chemistry
- Physics/Theoretical Physics
- Physics with Astrophysics

‘My course has amazing teaching, fantastic facilities and the experience is one I am never going to forget.’

Julia Kennedy, Chemical Physics student

Degrees and UCAS codes
BSc (Hons) (F335) – four years
MSci (F322) – five years
MSci with work placement (F320) – five years

Accreditation
These programmes are accredited by the Institute of Physics.

Entry requirements
BSc, MSci
Highers: AAAA or AAABB (including two science subjects) in first sitting = unconditional offer.

Applicants who achieved AAAB or ABBBB (including two science subjects) at their first sitting WILL receive an offer from the University. This offer may be conditional (on second sitting results) or unconditional, depending on how many applications are received from students who have attained these grades.

Additional offers, either conditional or unconditional, MAY be made to applicants who achieved between ABBB and AABBB (including two science subjects) at their first sitting. A decision re these applications will be made in March 2014 once all applications have been reviewed.

Applicants who receive an offer conditional on second sitting results will be required to study Advanced Highers in relevant subjects as an integral part of their conditional offer.

A-levels: AAB, including two science subjects. Applicants are normally expected to have A-levels at B or above in Mathematics, Chemistry and Physics.

IB: A minimum of 34 points is required to be considered for an offer. Actual offers will specify subjects and grades to be attained at Higher Level.

For a full list of alternative qualifications please see www.glasgow.ac.uk/undergraduate/entryrequirements.

E: physics-ugadmissions@glasgow.ac.uk
W: www.glasgow.ac.uk/ug/chemicalphysics
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.

**Programme structure**

**Year 1**
In first year 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. Courses you will typically study are dynamics, wave motion, properties of matter, thermal physics, optics, electricity and magnetism, and quantum physics.

You will also study two other subjects of your choice in year 1 – [www.glasgow.ac.uk/ug/aboutdegrees](http://www.glasgow.ac.uk/ug/aboutdegrees).

**Year 2**
In second year you will extend and deepen your broad physics education, undergo training in more specialised experimental techniques and expand your awareness of the latest developments in modern physics research.

Courses you will typically study are physics of waves, dynamics, physics of solids, thermal physics, electricity and magnetism, nuclear and particle physics, physics of optics, and mathematical techniques.

You will also study one or two other subjects in year 2 – [www.glasgow.ac.uk/ug/aboutdegrees](http://www.glasgow.ac.uk/ug/aboutdegrees).

**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, from sub-atomic particles to optics and electromagnetism, 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 your Honours programme 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. 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.

**Partnership and industry links**
The University is part of the Scottish Universities’ Physics Alliance (SUPA), a group of eight university physics and astronomy departments which aims to place Scotland at the international forefront of research in physics and astronomy.

**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 the Large Hadron Collider at CERN and the worldwide collaboration searching for gravitational waves. You will have the opportunity to take part of your degree abroad.

**Career prospects**
Employers are competing for good physics graduates at a time when there is a worldwide shortage, making employment prospects for physics graduates very good. The scientific knowledge and mathematical and analytical skills you acquire could find you working across a wide range of industries including aerospace, electronics, semiconductors, petroleum, communications, computing, medical physics, education, commerce and civil service – both in scientific and administrative areas.

---

**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

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

**Joint Honours**
At Honours level, Physics can be taken as a Single Honours or Joint Honours degree. See [www.glasgow.ac.uk/ug/physics](http://www.glasgow.ac.uk/ug/physics) for a full list of Joint Honours combinations and UCAS codes.

**Entry requirements**
- BSc, MSci
  - Highers: AAAA or AAABB (including two science subjects) at first sitting – unconditional offer. Applicants who achieved AAB or AABB (including two science subjects) at their first sitting MAY receive an offer from the University. This offer may be conditional (on second sitting results) or unconditional, depending on how many applications are received from students who have attained these grades. Additional offers, either conditional or unconditional, MAY be made to applicants who achieved between AABB and AABBB (including two science subjects) at their first sitting. A decision re these applications will be made in March 2014 once all applications have been reviewed. Applicants who receive an offer conditional on second sitting results will be required to study Advanced Higher in relevant subjects as an integral part of their conditional offer.
  - A-levels: AAB, including Physics and Mathematics.
  - IB: A minimum of 34 points is required to be considered for an offer. Actual offers will specify subjects and grades to be attained at Higher Level. For a full list of alternative qualifications please see [www.glasgow.ac.uk/undergraduate/entryrequirements](http://www.glasgow.ac.uk/undergraduate/entryrequirements).

**Advanced entry**
- If you have exceptional A-level or Advanced Higher grades it is possible to follow a faster route, which allows you to complete a standard BSc (Hons) or MSci degree in one year less than usual. See [www.glasgow.ac.uk/undergraduate/degrees/advancedentry](http://www.glasgow.ac.uk/undergraduate/degrees/advancedentry)

**Glasgow International College**
For international students entry to this programme is supported by courses from Glasgow International College - [www.glasgow.ac.uk/gic](http://www.glasgow.ac.uk/gic).

E: physics-ugadmissions@glasgow.ac.uk
W: [www.glasgow.ac.uk/ug/physics](http://www.glasgow.ac.uk/ug/physics)
Physics with Astrophysics

In this degree programme the study of physics is pursued with particular focus 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.

93%  YES

Students were satisfied overall  Additional accreditation (see panel for details)

Data published by Unistats (unistats.direct.gov.uk) January 2013.

Programme structure

Year 1
In first year 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 two other subjects of your choice in year 1 – www.glasgow.ac.uk/ug/aboutdegrees.

Year 2
The second year will extend your broad physics education, providing training in more specialised experimental techniques and expanding your awareness of the latest developments in 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.

You will also study one or two other subjects in year 2 – www.glasgow.ac.uk/ug/aboutdegrees.

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.

Special feature
Astronomy lectures are complemented by our observatory, planetarium and telescope facilities. The University also maintains close links with the Glasgow Science Centre, home of one of the UK’s best planetariums.

Partnership and industry links
The University is part of the Scottish Universities’ Physics Alliance (SUPA), a group of eight university physics and astronomy departments which aims to place Scotland at the international forefront of research in physics and astronomy.

Our international links
The School of Physics & Astronomy has strong international links across a wide range of research fields. Many of our staff play leading roles in major international research projects, such as the Large Hadron Collider at CERN and the worldwide collaboration searching for gravitational waves. You will have the opportunity to undertake part of your degree abroad.

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.

You may also be interested in
- Astronomy
- Chemical Physics
- Physics/Theoretical Physics
The city of Glasgow

- The UK’s 3rd largest city and one of the world’s top student cities
  (QS Best Student Cities 2012)
- Lively nightlife with more than 700 bars, pubs and nightclubs and 7 cinemas, including the tallest cinema in the world
- More than 20 museums and art galleries, including Kelvingrove Art Gallery & Museum and the Gallery of Modern Art
- Known as ‘dear green place’ with over 90 parks and public gardens
- Host of the MOBO awards x 2 plus over 10 different festivals each year
- UK’s first UNESCO City of Music, host to around 130 music events every week
- Largest retail centre in the UK outside London with everything from high street favourites to independent and vintage stores
- Commonwealth Games host 2014
- Excellent sports facilities including wall climbing venues, indoor and outdoor ski slopes and the Sir Chris Hoy Velodrome.

‘Glasgow is one of Britain’s urban gems.’
James Bainbridge, Author, Lonely Planet’s Study Glasgow

Follow Glasgow on Facebook, Twitter and YouTube: www.glasgow.ac.uk/interact

Discover the city with your free Glasgow App. Search ‘Glasgow’.