

## Physics Foundation Year

### Undergraduate degree course in Physics Foundation Year F304:

The Physics Foundation Year is a special one-year programme, open to both home and EU students, that will prepare you to study for a physics degree at the University of Birmingham.

International students should see the Birmingham Foundation Academy, specific course details are located on the Engineering and Physical Sciences Pathway.

Physics addresses some of the deepest questions of how the universe works and explores nature beyond the bounds of human experience. Our staff conducts research from the longest length and time scales - e.g. the role of dark matter in the structure of the Universe and mimicking the Big Bang in heavy nuclear collisions - to the smallest length and time scales, e.g. the hunt for the Higgs boson and other aspects of elementary particle physics.

In between these extremes, understanding how the Sun and stars work, the physics and biophysics of nanoscale structures, quantum states of matter such as superconductivity and ultracold atom gases, and metamaterials (the physics of invisible cloaks) are all key to our research themes.

You can benefit directly from this research activity by joining us and being taught by internationally acknowledged experts at the frontiers of physics; and by taking part in the research itself in the final years of your degree.

**[Study here and find out why the University of Birmingham was awarded The Times and The Sunday Times University of the Year 2013-14 \(http://www.birmingham.ac.uk/news/latest/2013/09/20-sep-Birmingham-announced-as-University-of-the-Year.aspx\)](http://www.birmingham.ac.uk/news/latest/2013/09/20-sep-Birmingham-announced-as-University-of-the-Year.aspx)**

#### Course fact file

UCAS code: F304

Duration: 1 year

Start date: September

#### Related courses

**[Undergraduate degree courses - Physics and Astronomy \(/schools/physics/undergraduate/index.aspx\)](/schools/physics/undergraduate/index.aspx)**

#### Contact

Please contact the Admissions Team on:

Tel: +44 (0)121 414 4563

Email: [science-eng-foundation@contacts.bham.ac.uk](mailto:science-eng-foundation@contacts.bham.ac.uk) (mailto:science-eng-foundation@contacts.bham.ac.uk)

**[School of Physics and Astronomy \(/schools/physics/index.aspx\)](/schools/physics/index.aspx)**

### Details

The Physics Foundation Year is a special one-year programme, open to both home and international students, that will prepare you to study for a physics degree at the University of Birmingham.

The programme is open to:

- Able international students whose final year of study may not have prepared them for direct entry to Year 1 of our degree programmes
- Able home students with unconventional qualifications, including mature students with a non-standard educational background

When you enrol on the Physics Foundation Year, you become a full student of the University, with access to all the same facilities as other undergraduate students. The programme is taught over two semesters beginning at the end of September and ending in July the following year.

The programme consists of modules of study totalling 120 credits. Some of the modules are subject-based, while others are skills-based. In addition, international students have the option to take English language modules. The combination of modules is designed to provide you with the right skills, experience and knowledge for degree-level study. Successful completion of the Physics Foundation Year guarantees you a place on an Honours degree in Physics at Birmingham, provided a mark of at least 60% is achieved in the mathematics modules. Entry to the specialist Theoretical Physics degrees will only usually be considered at the end of the first year of the Honours degree programme.

#### International students

International students should see the Birmingham Foundation Academy, specific course details are located on the Engineering and Physical Sciences Pathway.

#### Foundation Year Handbook

All the progression routes onto first year courses will be maintained and the core content of modules offered will be similar, but the module structure may be different. For information about the current programme **[please see the course Handbook \(PDF 204 kb\) \(/Documents/college-eps/foundation/foundation-handbook.pdf\)](/Documents/college-eps/foundation/foundation-handbook.pdf)**.

#### Related links

- **[Undergraduate degree courses - Physics and Astronomy \(/schools/physics/undergraduate/index.aspx\)](/schools/physics/undergraduate/index.aspx)**

## Why study this course

The information below relates to our BSc/MSci courses:

Our School of Physics and Astronomy is one of the largest in the country, where internationally recognised research groups work on everything from the smallest fundamental particles through nanoscale physics to cosmology. Our excellence in research and teaching means that we can offer you a strong understanding of core physics, combined with many opportunities to pursue your own interests.

The latest Research Assessment Exercise places us joint fifth in the country. This strength in research enables us to offer specialised modules and projects, delivered by research-active staff working at the cutting edge of physics. We're proud of our small-group teaching environment which includes skills-development sessions, problem-based learning classes and weekly tutorials in groups of no more than four students. The School has well-equipped, state-of-the-art laboratories and computing facilities, and the University has its own observatory on the outskirts of Birmingham.

All our Physics degree programmes are accredited by the Institute of Physics (IoP). This independent, rigorous assessment of our programmes has several advantages for our students. For example, holders of accredited degrees are eligible to follow a route to corporate membership of the Institute and to the CPhys professional qualification. You can find more information at [www.iop.org](http://www.iop.org) (<http://www.iop.org>).

## Fees and funding

**Standard fees** (<http://www.birmingham.ac.uk/students/ug/courses/fees/standard>) apply

Learn more about **fees and funding** (<http://www.birmingham.ac.uk/students/ug/feesandfinance/loans.aspx>).

### Scholarships

Learn more about our **scholarships and awards** (<http://www.birmingham.ac.uk/students/ug/feesandfinance/funding/index.aspx>).

## Entry requirements

**Number of A levels required:** 3

**Required subjects and grades:** At least grade B in GCSE Maths.

The Foundation Year offers a route for students who have taken the wrong combination of A levels (to apply for first year entry of a physics degree) but have performed well. It also caters for those with unconventional qualifications or mitigating circumstances.

Offers are made on a case-by-case so please contact the Admissions Tutor for advice.

### Additional information:

Successful completion of the Foundation Year guarantees you a place on our BSc Physics programme.

### International students:

International students should see the Birmingham Foundation Academy, specific course details are located on the Engineering and Physical Sciences Pathway.

Depending on your chosen course of study, you may also be interested in the Birmingham Foundation Academy, a specially structured programme for international students whose qualifications are not accepted for direct entry to UK universities. Further details can be found on the **foundation academy web pages** (<http://www.birmingham.ac.uk/students/foundation-academy/Pathways/index.aspx>).

## How to apply

Apply through UCAS at [www.ucas.com](http://www.ucas.com) (<http://www.ucas.com/>)

Learn more about **applying** (<http://www.birmingham.ac.uk/students/ug/courses/apply>).

## Key Information Set (KIS)

Key Information Sets (KIS) are comparable sets of information about full- or part-time undergraduate courses and are designed to meet the information needs of prospective students.

All KIS information has been published on the Unistats website and can also be accessed via the small advert, or 'widget', below. On the **Unistats website** (<http://unistats.direct.gov.uk>) you are able to compare all the KIS data for each course with data for other courses.

The development of Key Information Sets (KIS) formed part of HEFCE's work to enhance the information that is available about higher education. They give you access to reliable and comparable information in order to help you make informed decisions about what and where to study.

The KIS contains information which prospective students have identified as useful, such as student satisfaction, graduate outcomes, learning and teaching activities, assessment methods, tuition fees and student finance, accommodation and professional accreditation.

## Related links

**[EPS Foundation Year Handbook \(pdf 303 KB\) \(/Documents/college-eps/foundation/foundation-handbook.pdf\)](#)**

## Learning and teaching

The information below relates to our BSc/MSci courses:

How will I be taught?

As a Birmingham student, you are joining the academic elite and have the privilege of learning from world-leading experts in the field of physics and astronomy. Throughout your studies, you'll be encouraged to become an independent and self-motivated learner, thriving on challenge and opportunities to think for yourself.

**Personal tutor:** The School has a comprehensive welfare system based around academic and personal tutors, and led by the Senior Tutor, who will see students at any time. Our tutors support you throughout your studies to help you in three important areas: supporting your academic progress, developing transferable skills and dealing with any welfare issues. You can also raise any issues related to your studies at the Staff Student Committee or, for the fastest response, the weekly meeting of Student Representatives.

**Contact hours:** In your first year, the course is delivered as lectures, small group workshops, laboratories, computer-based activities, enquiry-based learning and tutorials. Much of your learning will be carried out in small groups, including laboratory work, examples classes, and tutorials. There's a strong emphasis on project work throughout your degree, especially in your final year.

**Laboratory-based work** is an integral part of our Physics degree programme, vital to develop your experimental practical skills, and to reinforce concepts introduced in lectures or to explore a particular phenomenon. You will benefit from our recent £1 million investment into additional first-class physics-teaching laboratory facilities.

**Lectures** form the major source of information for most modules and are delivered in a variety of styles by enthusiastic staff, in our state-of-the-art lecture theatres.

**Small group tutorials** support your lectures in years one and two, consisting of groups of no more than four meeting once a week with an academic or researcher. By year three you'll be choosing from a wide range of options and specialisms, beyond the scope of a single tutor. Instead you can sign up for 'supervisions' - specialist tutorials given by a senior academic carrying out research into each specific area.

**Project work** allows you to take part in our leading research activity across the full breadth of the subject - from astrophysics to quantum matter and particle physics - in every year of your degree. It's an unprecedented chance to gain easy access to world experts and cutting-edge equipment in all the major branches of the subject.

**Examples classes** focus on working through problems issued by the lecturer and are usually run by a lecturer with the help of one or more graduate students. They're a chance to check your learning and reflect on particular examples.

**Web-based learning** is an essential part of the programme, with all our modules linked to iVLE - a virtual learning environment that gives you access to lecture notes, additional learning units, self-tests and supplementary interactive information to support your learning.

## Assessment methods

**The information below relates to our BSc/MSci courses:**

Each module is assessed independently with most containing some components of continuous assessment. Typically, year one and two lecture modules contain 20% continuous assessment in the form of weekly problem sheets. Some modules are completely assessed by coursework. Assessment methods include end-of-year examinations in May and June, written assignments, oral and poster presentations, computer-based tests, and laboratory and project reports.

During your first year you will undergo a formal 'transition' review to see how you are getting on and whether there are particular areas where you need support. This is in addition to your tutor who is based in Physics and can help with any academic issues you encounter.

Feedback is an essential part of learning and we use a wide range of methods, such as written feedback on your assessments, oral feedback during examples classes, workshop sessions, laboratories, and one-on-one discussions with your tutors. You'll receive prompt feedback on each assessment, highlighting the positives of your work as well as any areas that need more attention. You will also be given feedback on any exams that you take; if you need to resit an exam, we will ensure that you receive detailed feedback and support to enable you to learn for the future.

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## Employability

**The information below relates to our BSc/MSci courses:**

Feedback shows that 90%-95% of our students go on to work or study on graduation. Of those in employment, typically, around 90% gain graduate-level jobs and are earning salaries in the region of £18,000-£26,000 pa six months after graduation.

Preparing for your career is one of the first things you need to think about when you start university. As a Physics graduate, you have great potential to gain an intellectually stimulating, well-paid and high-powered job. You could pursue a career in research in an academic or industrial environment, or you could work in product development for a high-tech company. You could also apply your analytical and computational skills through scientific consultancy. This is just the beginning, with many other careers open to you, including teaching, patent law, and mathematical finance.

Studying physics at Birmingham is much more than attending lectures. As you progress through your degree, we place a great emphasis on teaching you transferable skills: mathematical, computational, problem solving, group working, management and presentational. They will all contribute to making you more attractive to potential employers.

**Alumni Brigid Jones (MSci Physics) talks about her time at Birmingham**



Whether you have a clear idea of where your future aspirations lie or want to consider the broad range of opportunities available once you have a Birmingham degree, our Careers Network and the School's own career tutor can help you to secure research or industry placements and, eventually, your graduate job.

Our [unique careers guidance service \(https://intranet.birmingham.ac.uk/as/employability/careers/college/eps.aspx\)](https://intranet.birmingham.ac.uk/as/employability/careers/college/eps.aspx) is tailored to your academic subject area, offering a specialised team (in each of the five academic colleges) who can give you expert advice. Once you have a career in your sights, one-to-one support with CVs and job applications will help give you the edge. In addition, our employer-endorsed, award-winning **Personal Skills Award (PSA)** (<https://intranet.birmingham.ac.uk/as/employability/psa/index.aspx>) recognises your extra-curricular activities, and provides an accredited employability programme designed to improve your career prospects.

Your Birmingham degree is evidence of your ability to succeed in a demanding academic environment. Employers target Birmingham students for their drive, diversity, communication and problem-solving skills, their team-working abilities and cultural awareness, and our graduate employment statistics have continued to climb at a rate well above national trends. If you make the most of the wide range of services you will be able to develop your career from the moment you arrive.

Past Physics and Astronomy graduates have gone into a very wide range of challenging and rewarding careers in destinations which include:

- NASA
- NHS - Medical Physics
- Rolls-Royce
- EDF Energy
- BAE Systems
- Barclays Capital
- PriceWaterhouse Coopers
- Accenture - Technology Services

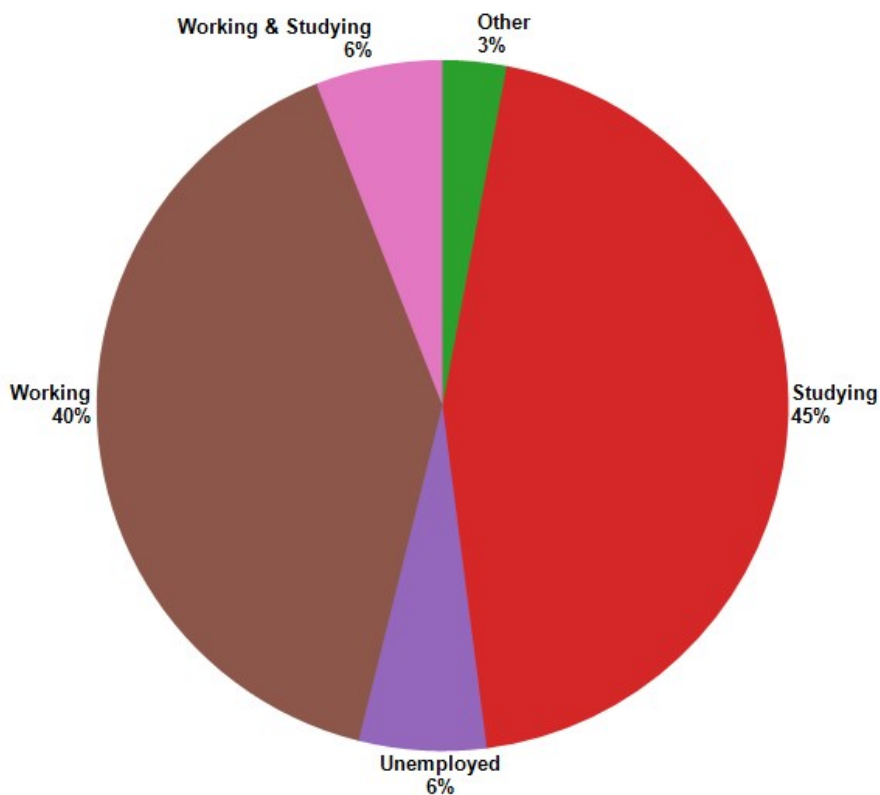
### University Careers Network

Preparation for your career should be one of the first things you think about as you start university. Whether you have a clear idea of where your future aspirations lie or want to consider the broad range of opportunities available once you have a Birmingham degree, our Careers Network can help you achieve your goal.

If you make the most of the [wide range of services \(https://intranet.birmingham.ac.uk/as/employability/careers/college/eps/index.aspx\)](https://intranet.birmingham.ac.uk/as/employability/careers/college/eps/index.aspx) you will be able to develop your career from the moment you arrive.

### Destinations of Leavers from Higher Education (DLHE) 2011/12

The DLHE survey is conducted 6 months after graduation.



#### Examples of occupations

- Software Engineer
- Trainee Clinical Scientist
- Technology Graduate
- Secondary School Teacher - Physics
- Research Analyst
- Nuclear Manufacturing Engineer Intern
- Musician
- Recruitment Consultant
- Internet Application Engineer
- Data Analyst

#### Further study - examples of courses

- MSc Astrophysics
- MSc Computer Science
- MSc Forensic Ballistics
- MSc Medical Imagery
- MSc Nuclear Physics
- MSc Physics and Technology
- MRes Chemical Engineering
- PhD Electronic Engineering
- PhD Physical Sciences

Visit the [Careers section of the University website](#)

<https://intranet.birmingham.ac.uk/as/employability/careers/college/eps.aspx> for further information.

See the full details at  
UNISTATS.

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