PHYSICAL SCIENCES FOUNDATION YEAR (FG10)
ENGINEERING FOUNDATION YEAR (HFJ0)
PHYSICAL SCIENCES FOUNDATION YEAR (FGI0)

ENGINEERING FOUNDATION YEAR (HFJ0)

The Physical Sciences Foundation Year and the Engineering Foundation Year at the University of Birmingham are integrated foundation degrees, which give access to our highly ranked physical sciences and engineering undergraduate courses. They are designed for students who have not taken the qualifications necessary to apply directly for first-year entry.

Please note FGI0 and HFJ0 are only open to applicants who are classified as Home for fees. Overseas students can apply to the Birmingham International Academy’s Engineering and Physical Sciences Foundation Pathway www.birmingham.ac.uk/BIA

Upon successful completion of the foundation year, you will automatically progress to your chosen first-year course, as long as you meet the subject-specific progression criteria.

The Physical Sciences Foundation Year can lead to our Bachelors degrees in:
- Computer Science
- Mathematics
- Nuclear Science
- Physics (excluding Theoretical Physics or Theoretical Physics and Applied Mathematics)

The Engineering Foundation Year can lead to our Bachelors degrees in:
- Aerospace Engineering
- Civil Engineering
- Electronic and Electrical Engineering
- Materials Science and Engineering
- Mechanical Engineering
- Mechatronic and Robotic Engineering
- Metallurgy
- Railway Engineering

Applicants should indicate which of these subjects they wish to progress to within their UCAS application. Final course decisions must be made during the second semester of the foundation year. You will have an opportunity to upgrade to the undergraduate Masters course, courses with a year in industry, or international study year where available, if you meet the relevant progression requirements at the end of the second year of the undergraduate course.
The foundation year is multidisciplinary and offers a broad programme of study, providing a solid level of knowledge across science, engineering and mathematics. Mathematics is essential for all students to succeed within Engineering and Physical Sciences and as such we place a great emphasis on this subject in the Foundation Year. The skills you learn here will allow you to enter the first year on an equal footing to those who have taken A level Mathematics.

As well as Mathematics modules, you will also take modules in Physics, Engineering and Computer Science. Additionally to learning skills essential for specific degree routes, these modules develop many transferable skills including teamwork, building your confidence in technology and numeracy and developing computer literacy and presentation skills.

Course material is taught in a similar format to most of our undergraduate programmes. Core material is delivered in lectures supported by example classes and laboratory work where applicable. Our online virtual learning environment provides students with course materials and information for essential self-study outside of scheduled classes. Assessment has a focus on end-of-year examinations, supplemented by class tests and coursework.

Lecturers and tutors who teach the foundation year courses are all members of staff at the University, meaning you will have access to the same excellent teaching that won the University a Teaching Excellence Framework gold ranking. As the foundation year is taught in a traditional university style, students find this a useful adjustment year after further education. Having adapted to this style of learning in their preliminary year, foundation students who progress to undergraduate degrees can focus on new material and tend to perform well.

Each foundation year student is allocated a personal tutor to help keep you on the right track and make the most of the learning and developmental opportunities available to you during your studies. Throughout your studies here at the University of Birmingham, you will have regular meetings with your personal tutor, sometimes one-to-one, sometimes in a group. The University provides a range of other support to ensure you get the most from your time at Birmingham, including mathematics, study and writing skills workshops and one-to-one support. Wellbeing tutors will work with students who have a disability to provide a reasonable adjustment plan to ensure the course is accessible to your needs.

As a leading research-focused university without the required qualifications needed for first-year entry. All teaching takes place on the main Birmingham Edgbaston campus, the home of the majority of our undergraduate degrees. As such, you will have access to the same excellent facilities as other students, for example, the state-of-the-art library, sports centre and the stunning new outdoor space: the Green Heart. You will be treated as first years with regard to University accommodation and will be eligible for the Fresher’s Guarantee Scheme.
SCHOOL OF COMPUTER SCIENCE

If you progress to a degree in Computer Science, you’ll join a department which has consistently been one of the top ten institutions offering computing in the UK over the last five years. The School provides specialist teaching and conducts cutting-edge research in Intelligent Systems (including Machine Learning and Robotics), Cyber-Security, Theoretical Computer Science and Human-Centred Computing. Led by academics at the forefront of their fields, we deliver outstanding education and offer comprehensive careers support to ensure an exciting range of opportunities for your future.

SCHOOL OF ENGINEERING

The School of Engineering has a shared first year across degrees in Civil Engineering, Electronic and Electrical Engineering, Mechanical Engineering, Mechatronic and Robotic Engineering and Railway Engineering. This means, if you wish, you can delay your choice between these disciplines for a further year. The University has begun work on a new School of Engineering building, due for completion in 2020. It will bring together many engineering disciplines into one state-of-the-art building.

Our CIVIL ENGINEERING courses are designed to give you as many opportunities as possible to tackle problems by applying taught materials in design exercises. These interdisciplinary design projects thread through our degree programmes, increasing in complexity as the course continues. You will benefit from our excellent links with industry to gain real-world experience during your study, and to prepare you for entering the workplace as a graduate. Wherever your career takes you, you will be part of the next generation of professional engineers, solving problems affecting our lives today and using your expertise to plan for the future.

If you choose to progress to a degree with ELECTRONIC AND ELECTRICAL ENGINEERING, which includes Mechatronic and Robotic Engineering, you will be equipped to meet the technological challenges of the 21st century including autonomous vehicles, the Internet of Things, embedded computation, renewable energy, distributed generation, secure and high rate communications, electric vehicles, remote sensing, big data analytics, human-machine interactions, mechatronics and robotics. The courses are designed to meet the request from industry for graduates who are well versed in subject fundamentals yet skilled in working across traditional boundaries.

Progressing to a course within MECHANICAL ENGINEERING gives you the expertise needed to tackle real-world problems. As an engineering professional, you might be responsible for product design, testing, planning for profitable and high-quality production, management of business, or all of the above – and a degree from Birmingham provides you with the skills to deliver results in an ever-changing industry. Our students benefit from a research-led culture, which informs our teaching. Our expertise is in applying engineering science to solve problems of industrial and societal significance. We have specific research strengths in several areas, and there are opportunities for students to undertake projects in a number of areas including Vehicle Technology, Advanced Manufacturing Technology, Biomedical Engineering and Nanotechnology.

Studying RAILWAY ENGINEERING will not only give you an accredited degree in either Civil Engineering or Electrical Engineering, but also the foundations of an exciting and rewarding career where your skills and knowledge will be highly sought-after. Railway projects are booming: new mainline railways and urban transportation developments are taking place around the world, from Afghanistan to Zimbabwe. Advances in technology mean new ways to manage railway systems and improve how we move about. This means that there is already a high demand for civil and electrical engineers who understand the specific details of the railway sector and who understand the complex nature of railway systems.
College of Engineering and Physical Sciences

If you choose to progress to a degree in Mathematics, you can look forward to a challenging and transferable degree in a friendly and supportive department. The department has excellent links with industry and emphasises personal development and career support throughout the degree. The School of Mathematics ensures their students have all the support they need to succeed including providing regular support classes and peer-assisted study sessions. The Maths Society is a big part of department life, holding regular socials, volunteering opportunities and sports events to name a few.

SCHOOL OF METALLURGY AND MATERIALS

The School of Metallurgy and Materials is the home for our degrees in Materials Science and Engineering, Aerospace Engineering, Nuclear Engineering and Nuclear Science. Our School and the Interdisciplinary Research Centre in Materials Processing together make up the largest centre for materials research in the UK. We work on a diverse range of projects in the aerospace, automotive, biomedical, sport and sustainable development fields. MATERIALS SCIENTISTS are at the forefront of new technology, pushing forward the boundaries of science and engineering with designers and engineers of every discipline. Research and development produce new materials to meet the demands of modern technology. If you join us, you will become part of an academic elite designing a safer, more sustainable and brighter future!

Progressing to a degree in AEROSPACE ENGINEERING will give you the skills required to successfully join the wider aerospace industry. In particular, our graduates will be prepared to transform the emerging fields of satellite, deep space missions and unmanned aerial vehicles, where remote control and communications are required. This is achieved by a common first two years where all aspects of aerospace engineering are covered before you specialise in Materials or Engineering (structures and avionics) for your final year. Graduates could also pursue careers and research opportunities in non-aerospace areas where expertise in advanced materials, manufacturing, structures, aggressive environments and remote communication and control are important.

Choosing to progress to a NUCLEAR SCIENCE degree will provide an ideal start to your career in the nuclear energy sector.

Birmingham has been active in graduating students for this industry for over 60 years. The course focuses on the fundamental physics and engineering challenges facing the industry, resulting in graduates with the knowledge and skills required to both work on decommissioning, current nuclear projects, research and future developments. Students get hands-on practice using different types of radiation detectors and handling radioactive sources.

SCHOOL OF PHYSICS AND ASTRONOMY

Progressing to a PHYSICS degree at Birmingham will allow you to study in one of the top departments in the country. The department has a very broad range of research interests leading to a wide range of optional modules and projects in later years. To name a few, our scientists were part of the LIGO collaboration, which detected gravitational waves; the ATLAS collaboration, which jointly discovered the Higgs boson, and hosts the Quantum Technology Hub for Sensors and Meteorology. The three courses available to foundation year students (Physics, Physics and Astrophysics, and Physics with Particle Physics) are very similar initially so it is possible to swap between them even after foundation year. The School has a high graduate employment rate with employability and transferable skills embedded throughout the course.
ENTRY REQUIREMENTS

Applicants taking A level Mathematics or equivalent are not considered for this course.

We require applicants to hold GCSE English 4/C and Maths 6/B and do consider retakes. Students may be considered with Core Maths grade B and may be considered if they do not have GCSE Maths.

We accept a range of level 3 qualifications, in general, they must be equivalent to at least three A levels but qualifications are considered individually, not on a UCAS point system. If you have any questions please contact the admissions tutor to discuss your qualifications before applying.

The qualifications we consider include, but are not limited to:

- Three A levels excluding Mathematics.
- International Baccalaureate, excluding higher level mathematics.
- BTECs or Cambridge Technicals in subjects related to Physical Sciences, Computing or Engineering equivalent to 3 A levels. Students with these qualifications only may be required to sit an entrance exam.
- Access to Higher Education courses with at least 12 level 3 graded credits in Mathematics and 12 level 3 graded credits in Physics.

For our current typical offer grades, please see our website or contact the admissions tutor.

LEARN MORE

Admissions Tutor
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Email: science-eng-foundation@contacts.bham.ac.uk
This leaflet was written several months in advance of the start of the academic year. It is intended to provide prospective students with a general picture of the programmes and courses offered by the School. Please note that not all programmes or all courses are offered every year. Also, because our research is constantly exploring new areas and directions of study some courses may be discontinued and new ones offered in their place.