Welcome to Foundation Engineering and Physical Sciences

The Foundation Engineering and Physical Sciences (FEPS) programme at Nottingham has been established for over 10 years and provides an integrated route for progression to almost 90 computer science, engineering, mathematics and physics undergraduate degree programmes.

We encourage a wide range of high-level applicants from a variety of backgrounds. This might include students who have good A level grades but perhaps in the wrong subjects for direct entry, international students who have qualifications that are not accepted for direct entry, and mature students who have decided to return to education.

The seamless progression onto year one of your chosen degree subject sets us apart from other universities; it is automatic, providing you successfully pass the foundation programme at the required standard. All teaching is carried out by highly experienced staff from the Faculty of Engineering, School of Mathematical Sciences and School of Physics and Astronomy. As a foundation student you will be a full member of the University and will have access to all the opportunities and facilities on offer, including a well-equipped sports centre, an active Students’ Union, welfare support and careers guidance.

Graduate engineers and scientists are creative, resourceful and logical people who enjoy solving problems – the kind of people employers from a range of industries are looking for. As a result, many of our graduates find excellent employment in engineering and science, as well as other industries including business, education, finance, health, and product design and manufacture.

This brochure gives you an introduction to our programme and the fantastic opportunities that lie ahead for you. If you have any questions, please do not hesitate to get in touch. We look forward to welcoming you soon.

Iain Paterson-Stephens
Associate Professor and Head of Department, FEPS

To find out where the foundation programme can take you, please visit nottingham.ac.uk/engineering/foundationyear
Studying foundation engineering and physical sciences at Nottingham

The University of Nottingham, described by The Times and Sunday Times University Guide 2016 as ‘the nearest Britain has to a truly global university’, has award winning campuses in the United Kingdom, China and Malaysia. On the foundation programme, you will have the opportunity to gain the skills and knowledge needed to undertake a degree while studying at a world-class university.

Fully integrated programmes
Unlike some UK universities, the foundation programme at Nottingham is fully integrated into your chosen degree, and is simply counted as year zero of a four or five-year programme. It will provide you with the best possible grounding for entry onto these programmes, with the topics covered being perfectly matched to subsequent stages of your course.

On successful completion of the foundation programme, providing you pass at the required level, you are guaranteed progression onto the first year of your chosen degree subject.

Student support
A great strength of our programme is the quality of care we provide to our students. A team of professional and experienced teaching staff ensure students learn in an environment in which they can realise their true potential, and as well as a personal tutor, we also allocate a mentor to look after each student during the foundation year. Mentors are chosen from trusted and high performing former foundation students who are able to pass on their experiences of student life at Nottingham.

Scholarship
The foundation programme has an annual BP scholarship where the top five students will each receive a cash prize of £1,000. For more information on bursaries and scholarships please visit nottingham.ac.uk/financialsupport

Extracurricular opportunities
We provide a wide range of extra opportunities and activities throughout the foundation programme, including social events, cultural visits and industrial talks and visits, all with the aim of bringing your learning to life and giving you the opportunity to enjoy new experiences. We also invite external speakers from industry and academia to give you an insight into the world of engineering and science, and the annual foundation football match is not to be missed.

To find out where the foundation programme can take you, please visit nottingham.ac.uk/engineering/foundationyear
Course content

The foundation engineering and physical sciences programme consists of modules in engineering, computer science, mathematics and physics.

The particular modules you study will be determined by the pathway you have chosen and your destination school (the one you wish to progress onto after the foundation programme). For example, if you have chosen to progress onto mechanical engineering you will need to study engineering, maths and mechanics in addition to certain science topics.

There are certain core (compulsory) modules that are always, but the optional modules will vary from year to year. During the first week and beyond, staff will be on hand to offer advice and support in choosing modules that will be suited to you, in order to give you the best possible start for the first year of your chosen degree.

The modules we offer are inspired by the research interests of our staff. As a result modules may change due to research developments or legislative changes, for example. The list below is a sample of typical modules that we offer, not a definitive list.

Foundation Mathematics 1 and 2
For students on both the engineering and physical sciences pathways, mathematics will form a large part of your undergraduate programme and your future career. Topics covered are broadly comparable to A level maths, but these modules have a narrower and deeper focus for engineering and science.

Study Skills
The objective of this module is to develop your study skills in the context of engineering and science, aiming to improve your awareness of research and communication methods, referencing, and presentation skills. Topics covered include effective technical writing through reports, laboratory and skills reports, developing reflective skills for professional development, preparing for exams, and time management.

Computer Methods
This module involves the use of a software environment (MATLAB) to help solve engineering and mathematical problems related to the course. MATLAB is a powerful mathematical modelling tool used heavily in industry. You will learn how to break down problems into smaller, manageable tasks, while being introduced to programming techniques. Topics covered include data structures and formats, plotting of graphical data, programming structure and style, and simple file handling.

Electricity and Magnetism/Electrical Circuit Principles
These two modules will provide basic knowledge of electricity and magnetism, required for entry into the first year of degree courses in the faculties of engineering and science. As the modules develop throughout the year, you will look at a range of component technologies, from passive devices such as inductors and capacitors through to simple semiconductors. In the second semester, topics covered include: AC circuits, circuit analysis techniques and electrical resonance.

Foundation Mechanics/Further Mechanics
These two modules will introduce you to the concept of scalars and vectors and give you a broad grounding in the basic response of rigid structures to imposed forces. You will also investigate the behaviours of rigid structures under circular and simple harmonic motion. On completion, you will be able to demonstrate your ability to collect, analyse, and evaluate experimental data relating to basic engineering mechanics, as well as solve set problems.

Vibration and Waves/Properties of Matter
These applied physics modules provide grounding in the physical explanations of vibrations (oscillations) and waves. This will cover simple models of vibrations and waves and extend their importance in the study of engineering and physics. In the second semester you will study atomic structures and behaviour.

The Universe/Molecules on the Move
These modules are for those of you who choose the physics and astronomy pathway. The Universe will provide you with an introduction to astronomy from the solar system to the Big Bang, covering general physical principles including cosmology, gravitational fields and orbits, observational techniques in astronomy, and stellar evolution. Molecules on the Move will give you an introduction to the thermal and mechanical properties of matter. Both modules are taught using a combination of lectures, workshops and practical lessons.

The programme provided solid foundations to begin my engineering career, building strong relationships with undergraduates and lecturers which presented me with a wealth of opportunities I didn’t expect to experience. The course covered a broad range of modules, helping me to realise my strengths and main interests, to pursue the most suitable engineering discipline.

Ray Wong, MEng in Electrical and Electronic Engineering with Foundation Year

For more detailed course content visit nottingham.ac.uk/ugstudy
Progression opportunities

Successful completion of the foundation programme leads on to around 90 different degree courses at the University of Nottingham. The degree you choose to take following the foundation programme depends largely upon the modules you select to study. Most students are able to delay making their final choice until the second semester of the foundation programme.

**Engineering routes**

Students are able to progress from the foundation programme on to courses in the following disciplines within the Faculty of Engineering:
- Aerospace Engineering
- Architecture and Built Environment*
- Chemical and Environmental Engineering
- Civil Engineering
- Electrical and Electronic Engineering
- Mechanical, Materials and Manufacturing Engineering*

**Science routes**

Students are able to progress from the foundation programme onto courses in the following disciplines within the Faculty of Science:
- Computer Science*
- Mathematical Sciences*
- Physics and Astronomy

If you would like more information on the undergraduate degree programmes available to you, please contact us using the details on the back cover.

As a mature student, I hadn’t studied maths or science since my GCSE’s and I was quite nervous when I embarked on this venture. The foundation year provided me with everything I needed and more, to make sure I had the ability and confidence to enter the first year.

Kim Onjun, MEng Mechanical Engineering with Foundation Year

* There are some degree routes that have additional progression requirements. Please see our website for an updated list: [nottingham.ac.uk/engineering/foundationyear](http://nottingham.ac.uk/engineering/foundationyear)

**Progression requirements**

In order to progress onto year one of your chosen undergraduate degree programme, for most routes you are required to pass the foundation programme and obtain a 50% course average at the first attempt.

You are allowed to ‘compensate’ a limited amount of modules, for example, if you fail a module (get less than 40%) and your overall average is acceptable you can still pass the course. However, ‘compensation’ is not allowed between certain core modules, for example, engineers must pass second semester mathematics.

If you pass the foundation programme with the required modules but with an average of between 40% and 49%, you will not be eligible for guaranteed progression onto the first year. You will instead be considered on an individual basis by destination schools. This is similar to Clearing within the UCAS system. If we think that you are likely to be in this situation, we will talk to you as early as possible in the year and make sure that you are aware of the situation and your different options.

In the unlikely event that you do not meet the progression criteria at the end of the foundation programme, you will be offered the opportunity to re-sit modules in order to pass the foundation certificate. Please note that if you are in this situation, automatic progression will not be guaranteed.

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I completed my previous education in Brazil so the foundation course was a great transition to the UK education system. The course certainly prepared me well to do my engineering degree.

Verena De Paula Cavalheiro, MEng in Manufacturing Engineering and Management with Foundation Year
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<thead>
<tr>
<th>Additional module progression requirements</th>
<th>Module grade</th>
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<tbody>
<tr>
<td>Computer Science</td>
<td>50% and over</td>
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<tr>
<td>Engineering</td>
<td>50% and over</td>
</tr>
<tr>
<td>Mathematical Sciences</td>
<td>Average of 60% and over</td>
</tr>
<tr>
<td>Physics and Astronomy</td>
<td>60% and over</td>
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Overseas students may be required to take additional English Language modules for progression. Please see website for full details.

For more information about progression opportunities visit [nottingham.ac.uk/engineering/foundationyear](http://nottingham.ac.uk/engineering/foundationyear)
Engaging study, incredible results

The structure of this course aims to give students the skills and confidence they need to tackle their first year at university.

Course structure
Each full year at university consists of 120 credits. A typical one-year foundation programme will consist of 12 modules, usually worth 10 credits each (some 20 credits). You will take a maximum of seven study modules in each semester.

A 10-credit module typically requires you to study around 42 contact hours, which are broken down into 24 hours of lectures; 12 hours of tutorials/problem workshops; and six hours of laboratory classes. In addition to this, each module requires you to complete coursework and assessments, directed study and reading. In total, each module will consist of at least 100 hours of your time.

Teaching methods
You will be taught through a combination of lectures, workshops, tutorials, practical work, projects and group work. This varied approach will give you the opportunity to learn in both formal and informal environments, and you will receive one-to-one tuition as well as encouragement to take part in group discussions and activities. We also encourage students to come and ask staff for help on a one-to-one basis if required. Theoretical-based sessions are usually supported by practical workshops where you can gain hands-on experience.

Key Information Sets
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 data is published on the Unistats website unistats.co.uk

Assessment
All modules are assessed through a combination of examinations and coursework. Typically, examinations count for around 60% of the module mark while the coursework mark (40%) is usually created from a series of smaller laboratory reports, tutorial exercises and self-directed research projects.

For more information about completing the foundation programme visit nottingham.ac.uk/engineering/foundationyear
How to apply

All applications for an undergraduate place to study at the University of Nottingham, including applications by international students, must be made through UCAS. Applications should be made online at ucas.com and candidates will be notified of decisions through UCAS using UCAS Track.

Your personal statement
This is the section of your UCAS form that tells us most about you, and you should make the best use of it. Be as specific and detailed as you can – we would like to see that you are a student who can work hard, be self-motivated and make the best possible use of the opportunities that our courses offer you. We would also like to hear about any skills you have gained through extracurricular activities.

Alternative qualifications
In this brochure you will find our A level entry requirements but we accept a much broader range of qualifications.

These include:
- Access to HE Diploma
- Advanced Diploma
- BTEC HND/HNC
- BTEC Extended Diploma
- Cambridge Pre-U
- International Baccalaureate
- Irish Leaving Certificate
- Scottish Advanced Highers
- Welsh Baccalaureate Advanced Diploma

This list is not exhaustive; we will consider applicants with other qualifications on an individual basis. Please contact us to discuss the suitability of your qualification.

Flexible admissions policy
We recognise that some educational and personal circumstances affect achievement. If we judge that you have experienced circumstances that have adversely affected your achievement, we will consider them when assessing your academic potential. Some courses may vary the offer as a result. For the most up to date information about our offers, please see the entry requirements section of our course pages on our online prospectus. For more information about this policy, please see nottingham.ac.uk/ugstudy/applying

Mature applicants
We encourage applications from mature applicants who have a significant gap in education. You should apply in the normal way through UCAS. More information for mature students can be found at nottingham.ac.uk/mature

International applicants
International students should visit The University of Nottingham International College website to find out further information about applying: kaplanpathways.com/colleges/university-of-nottingham-international-college

Deferred entry
Applicants who wish to defer their entry by a year will not be at a disadvantage. Please tell us something about your plans for your gap year in your UCAS personal statement.

Equal opportunities policy
The University aims to create the conditions whereby students and staff are treated solely on the basis of their merits, abilities and potential, regardless of gender, race, colour, nationality, ethnic or national origin, age, socio-economic background, disability, religious or political beliefs, trade union membership, family circumstances, sexual orientation or other irrelevant distinction.

Application process for home/EU applicants
You should apply via the Universities and Colleges Admissions Service (UCAS) using the institution code N84 and UCAS code H100. Applications should be made online via ucas.com. Candidates will be notified of decisions via UCAS Track: track.ucas.com

Academic entry requirements
All pathways
BBB at A level (any A level subjects will be considered with the exception of general studies and critical thinking), 30 at International Baccalaureate (IB), DDM at BTEC Extended Diploma. You must also possess mathematics and physics (or double science or science and additional science) at GCSE (or equivalent) level, all both at grade 5 (B), and a grade 4 (C) in GCSE English or equivalent. We will consider some applications from students who do not meet our GCSE requirements if they have a higher level award in an acceptable subject at an acceptable grade.

In keeping with the reform to GCSEs in England where subjects are to be graded from 9 to 1 instead of A* to G, we can confirm that in accordance with Ofqual recommendations, we will treat GCSEs graded numerically as GCSE grade A=7, B=5, C=4. GCSE qualifications taken outside of the UK will still be graded A* to G.

Over one third of our UK students receive our means-tested core bursary, worth up to £2,000 a year. For details, see nottingham.ac.uk/financialsupport

To find out how to apply please visit nottingham.ac.uk/ugstudy/applying
Experience it in a world beyond ordinary

There's so much for you to get involved in and explore at the University and around the city. Whether you're interested in sports, learning a language or just having fun with friends alongside studying, you'll be spoilt for choice.

Music
All student musicians at the University of Nottingham are encouraged to get involved with the vibrant musical life on campus. Find out more: nottingham.ac.uk/music/performance

Exploring your new city
Nottingham city centre is around a 10-minute bus ride away from University Park Campus, so you're always close to the action. There are plenty of music venues, from the world-famous Rock City to the Motorpoint Arena or one of the smaller gig venues for a more intimate live show. If you enjoy shopping, there are independent boutiques and vintage shops as well as high street names in our large shopping centres. Nottingham is also a hotspot for dining, with a great choice of cuisines on offer. Find out more: nottingham.ac.uk/nottinghamlife

Learn a language
The University’s Language Centre gives you the opportunity to study a language alongside your course. All languages are offered from beginners’ level with some going up to near native competency. There are nine languages to choose from: Modern Standard Arabic, Dutch, French, German, Italian, Japanese, Mandarin Chinese, Russian, and Spanish. Find out more: nottingham.ac.uk/language-centre

Your new home from home
At Nottingham we offer a wide range of room types across the campuses in both catered and self-catered accommodation. From standard single rooms with shared bathrooms to large en-suite studios and flats, there’s something to suit every budget and personal choice. For current pricing and to review all accommodation options please visit nottingham.ac.uk/accommodation

Your support network
Throughout your university journey there will be numerous people on hand to support and advise you, including tutors and dedicated staff. We have Student Service Centres on all three of our UK campuses, which provide a range of support, information and specialist services. Find out more: nottingham.ac.uk/studentservices

Sport
The University of Nottingham is one of the UK’s leading universities for sport and is currently ranked 4th in the university sport rankings*. We have one of the biggest portfolios of sports facilities in the country including the brand new £40m David Ross Sports Village. We also have a rich heritage of supporting Olympic medallists and we have more than 70 student sports clubs to choose from. Find out more: nottingham.ac.uk/sport

*British Universities and Colleges Sport Standings, 2015-16. 

Get involved in your Students’ Union
University of Nottingham Students’ Union (Unions) is a brilliant, diverse community, and whether you are an undergraduate or postgraduate, first-year or final-year student, you are a part of it. With 300+ student-led groups, clubs and societies, hundreds of volunteering opportunities and support for every stage of your university journey, your Students’ Union offers something for everyone. Find out more: su.nottingham.ac.uk

Your opportunity to study abroad
We offer a range of study abroad opportunities with many students having the option to live and study in another country as part of their university career. Studying or working abroad is a fantastic opportunity to broaden your horizons, experience different cultures, and develop the key skills that employers are looking for. Find out more: nottingham.ac.uk/studywithus/studyabroad

Your support network

Getting involved in your Students’ Union

Sport

Your opportunity to study abroad

Learn a language

Your new home from home

Experience it in a world beyond ordinary

Student experience
This brochure has been drafted in advance of the academic year to which it applies. Every effort has been made to ensure that the information contained in this brochure is accurate at the time of publishing, but changes (for example to course content) are likely to occur given the interval between publication and commencement of the course. It is therefore very important to check our website for any updates before you apply for the course by following nottingham.ac.uk/ugstudy. Where there is a difference between the contents of this brochure and our website, the contents of the website take precedence.