www.southampton.ac.uk/ecs
UK and EU enquiries:
fpse-ugapply@southampton.ac.uk
+44 (0)23 8059 2969

International enquiries:
global@southampton.ac.uk
+44 (0)23 8059 9699

Electronics and
Computer Science

UNIVERSITY OF
Southampton

Cover image: Electronics and Computer
Science students benefit from innovative
teaching based on world-leading research.

CREATING
YOUR FUTURE

Electronics and Computer Science
Undergraduate Courses 2017

Reach your goals at Southampton by combining your ambition, your talent and our support.

Choosing the right place to study is an important decision, with many factors to think about. Join us, an institution in the top one per cent of world universities* and a founding member of the Russell Group of research-intensive UK universities. At Southampton you are taught by world-leading academics on courses that are designed around you. We get you ready for the global jobs market, while giving you a great student experience.

Electronics and Computer Science (ECS) at the University of Southampton has been changing the world since its foundation and continues to do so. It is one of the world's largest and most successful departments of its kind, with over 60 years of technology development at the leading edge. You will benefit from our superb undergraduate facilities and our internationally renowned teaching and research programmes that are ranked among the best in the UK.

These include Computer Science and Software Engineering, Information Technology in Organisations, Web Science, Aerospace Electronic Engineering, Biomedical Electronic Engineering, Electrical and Electronic Engineering, Electrical Engineering, Mechatronic Engineering and Electronic Engineering.

CHOOSE
SOUTHAMPTON

Contents

*QS World University Ranking 2015/16

WORLD CLASS FACILITIES

The Mountbatten complex, a £110m investment in UK science and technology, is one of Europe's leading multidisciplinary cleanroom facilities

"When I started my degree, Southampton had – in my opinion – the best labs and equipment of any department in the country. After significant recent investment it has taken another giant leap to premium quality industrial standard equipment. These facilities are really unrivalled in any educational establishment."

Freddie Temperton
MEng Electronic Engineering
Fourth year

WORLD CLASS RANKINGS
University League Tables 2015/16

Electrical and Electronic Engineering
1st
in the UK.
The Guardian University Guide 2017

In the top
1% of global universities.
QS World Rankings 2015/16

Computer Sciences ranked in the UK top
10
for over 10 years.
Guardian University Guide 2017

100%
MEng Electrical Engineering students satisfied with the quality of the course.
Unistats 2016

1st
in the UK for Graduate Prospects for Electrical & Electronic Engineering and for Computer Science.
Complete University Guide 2017

Find out more
www.southampton.ac.uk/researchfacilities

CHOOSE SOUTHAMPTON:
A GLOBAL UNIVERSITY

The city of Southampton has a history of innovation and exploration. As a forward-thinking university, we uphold these values in our education and research; join us to forge your successful future.

➜ Our students can study in 54 countries in Europe and across the world
➜ Our 200,000 graduates are part of a network of professionals that covers 180 countries
➜ Our academics make a difference on every continent
➜ Our business, government and non-government organisation partners span the globe
➜ We are part of the Worldwide Universities Network, a collaboration of knowledge from around the world

Study abroad: we have over **400 links** with **233 partners** in **54 countries** around the world

We are an institution in the top **1%** of global universities

ECS staff members come from more than **40** different countries around the world

MIXED REALITY SKI RACE

A professional skier in Austria battled simultaneously against two online gamers in Greece and in Germany in the world's first interactive mixed reality downhill ski race using technology pioneered by ECS researchers

SPACE COLLABORATION

Research students and staff in Electrical and Mechatronic Engineering are helping in the development of advanced space electric propulsion for interplanetary travel, micro satellites and GEO communication satellites in collaboration with the European Space Agency, QinetiQ, Airbus and the Japanese Aerospace Exploration Agency

Student Robotics attract participants from across **Europe**

A ROBOTIC CHALLENGE

A team of University students led by ECS organise the annual Student Robotics competition to encourage sixth-form and college students to design, build and test fully autonomous robots

We offer Electrical and Electronic Engineering at our Malaysia campus. Students have the chance to gain a unique 'Southampton' education in Malaysia combined with two years in the UK.

MARINE ENVIRONMENT HELPED BY DRONES

Low-cost underwater unmanned autonomous vehicles, using ground-breaking Internet of Things technology from ECS researchers, are scanning the ocean to gather environmental information for management of one of Europe's busiest ports

Find out more
www.southampton.ac.uk/ecs

A CONNECTED WORLD

Engineers in Electronics and Computer Science are leading research into the future Internet of Things (IoT), where connectivity extends beyond traditional computing devices to new objects like vehicles, appliances and environmental sensors. As new objects are embedded with intelligent electronics and software, they become smarter and more connected; enabling them to sense and actuate the environment around them, and either act intelligently or be remotely accessed across the Internet.

World-leading IoT research at Southampton is collaborating across traditional science and engineering disciplines: from nanotechnologies to security and privacy, from energy harvesting to artificial intelligence, or from wireless communication to web science.

Intelligent medical sensors with embedded novel data analysis algorithms co-developed by Professor Koushik Maharatna monitor the symptoms of patients and automatically alert GPs via the internet when medical intervention is needed.

The £18 million European-funded CHIRON project teamed up with experts in the School of Medicine and Southampton University Hospital NHS Trust to invent embedded sensors with decision-making capabilities. Clinical trials of the platform have taken place in Southampton and Rome.

The IoT is re-inventing how doctors assess and attend their patients, opening up a more efficient and cost-effective future in healthcare.

Professor Koushik Maharatna is a member of the University's Institute for Life Sciences where many elements of our new Biomedical Electronic Engineering degrees will be taught. See page 29.

Find out more
www.southampton.ac.uk/ecs

CHANGE THE WORLD

Fulfilling future energy demand

Our researchers are partnering with industry to find savings in the monitoring and transmission of energy.

Dr James Pilgrim is tackling the problem of the high costs of using export cables to connect wind farms back to shore.

He says: "At the moment these cables are sized-based upon continuous current ratings, but the power output from wind farms varies with weather conditions and so the actual loading seen by the cable is less severe. This means that the cables may be over-sized for the amount of energy they actually export and therefore are more costly than they need to be.

"We are aiming to develop new modelling approaches that will enable the optimal sizing of such cables against realistic wind farm output levels. Accuracy is vital here, as we must manage the balance between reducing costs and any potential increase to the risk of overheating the cables."

His research is carried out in our world leading Tony Davies High Voltage Laboratory. The lab is an active centre for research into dielectric materials, insulation systems, high voltage and related phenomena and can be used by electrical, mechatronic and electrical and electronic engineering undergraduate students in their projects.

"The faculty is passionate about their work while teaching the next generation of engineers and offering a structured curriculum that covers a range of areas in electrical engineering while being flexible at the same time. The University also has a great reputation in industry, which always helps when looking for work experience or applying for a job after graduation."

Naved Syed
MEng Electrical Engineering

Dr James Pilgrim in the Tony Davies High Voltage Laboratory

Find out more
www.highvoltage.ecs.soton.ac.uk

OUR PEOPLE

Southampton people have a passion to change the world through their research and collaborations with global partners.

➜ Our lecturers push the boundaries of knowledge

➜ You are taught differently; our research informs your education

➜ Studying with our world-leading academics gives you the edge

➜ You are involved with important research as it unfolds

➜ Join us and share our knowledge to gain your advantage

Professor Paul Lewin, Head of ECS
HIGH VOLTAGE EXPERT

Paul, a leading expert in electrical power engineering, has received over £20m in funding and grants across a quarter of a century at the University. Under his innovative direction, the department's Tony Davies High Voltage Laboratory is exploring internationally leading research.

Dr Rob Maunder
INNOVATION IN ELECTRONICS

A former ECS student, Rob is now an Associate Professor at Southampton with research interests including wireless communications. Rob is the founder of a spin-out company which has recently secured funding to develop 5G technology that will allow us to download and view data 10 times faster than 4G.

Dr Kirk Martinez
SENSING THE PLANET

Kirk studies our planet using innovative combinations of technologies from the Internet of Things. His pioneering research allows him to use internet connected sensor devices in inhospitable environments to provide data on our changing Earth.
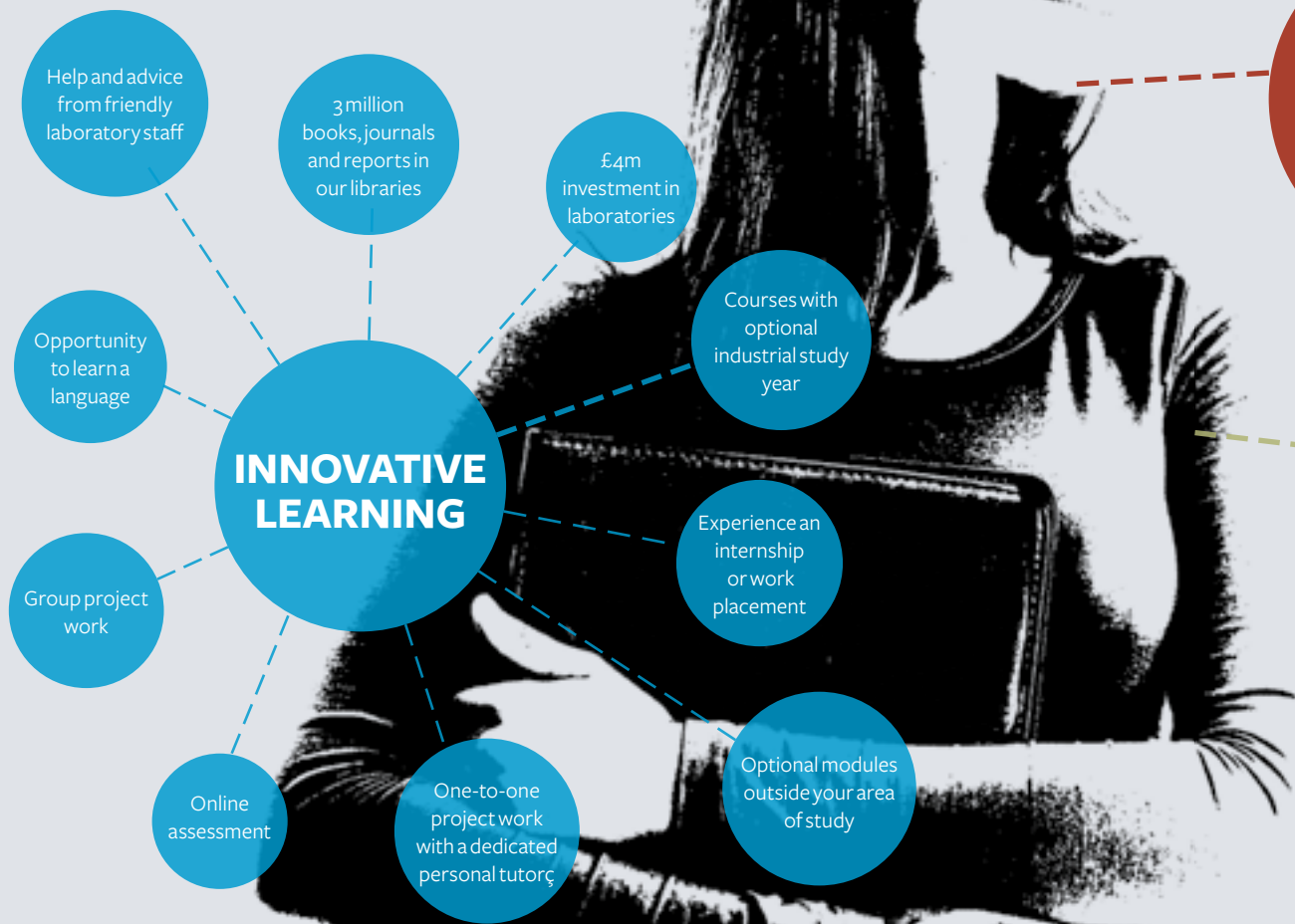
Dr Elena Simperl
LEADING DATA SCIENCE DEVELOPMENT

Elena is the technical lead for the new European Data Science Academy and coordinates the Open Data Incubator for Europe (ODInE), a seven-part consortium offering startup support to open data entrepreneurs. An Associate Professor, she has recently launched a new MSc in Data Science.

⌂ **Find out more**
www.ecs.soton.ac.uk/people

CHOOSE SOUTHAMPTON:
DESIGN YOUR OWN EDUCATION

Your courses are developed and taught by world experts.

Your course offers you breadth as well as depth

➜ Be independent and shape your course

➜ As well as attending lectures and seminars, you can access many lectures and learning resources on the move

➜ We work with you to make programmes more flexible

➜ Take advantage of the Southampton opportunity; get involved in many extra-curricular activities to enhance your experience

GET AHEAD FOR YOUR CAREER

Get involved in community volunteering projects

Over 160 leading technology companies are affiliated to the ECS Careers Hub

ECS alumni provide mentoring to students on business start-ups and enterprise opportunities

Our annual Engineering and Technology Careers Fair attracted over 90 leading companies in 2016

400 jobs and internships posted in 2015

Companies like Google, Microsoft, and ARM sponsor coding challenges and start-up weekends

Take part in our outreach programme to spread the word about science, technology, engineering, and maths.

24 HOUR ACCESS TO VIRTUAL LEARNING

Online discussions and course materials

50,000 e-books

Wi-Fi across all our campuses

970 undergraduate and 660 postgraduate students in ECS

INNOVATIVE LEARNING

Help and advice from friendly laboratory staff

3 million books, journals and reports in our libraries

£4m investment in laboratories

Courses with optional industrial study year

Opportunity to learn a language

Group project work

Experience an internship or work placement

Online assessment

One-to-one project work with a dedicated personal tutor

Optional modules outside your area of study

SOCIAL LIFE

Social lab space for collaborative work and personal projects

JumpStart induction week helps you settle into ECS

15 dedicated ECS student societies

New makerspace lab for weekend innovation events with over 10 weekend-long hack events in the past year.

TEACHING AND LEARNING

What makes an Electronics and Computer Science (ECS) education so special?

As a student in ECS you will be taught by academics who are recognised internationally as leaders in their fields of expertise. You will study in specially designed teaching labs that are recognised for the quality of their facilities by professional accreditation panels and visitors.

In the first two years your lectures and tutorials will cover the fundamental topics, while your practical skills will be developed with extensive lab and course work. During your second year you will develop your team-working through group design exercises and projects.

In Years 3 and 4 we offer an extensive range of specialist technical options. With more than 100 academics delivering at least one advanced module in their specialist area, you will have a wide range of subjects to choose from. During your final two years you will also take part in major individual and group projects that enable you to work with academics to enhance and demonstrate your specialist practical skills, research skills, report writing, team work and presentation skills.

And as a Southampton student you will have the chance to develop the professional enterprise skills needed to make your mark on the world.

MEng Software Engineering student, Dennis Parchkov has developed an innovative method of augmenting paper maps with projected live digital data that can give disaster response teams the information they need to make the right decisions.

Through Future Worlds, an on-campus startup incubator at the University, Dennis had the opportunity to pitch his idea to investors and business leaders at the Royal Academy of Engineering in London.

CHOOSE SOUTHAMPTON:
SHAPE YOUR FUTURE

A degree at Southampton opens doors for career opportunities

Southampton fast-tracks your ambitions

➜ We prepare you for future challenges not yet imagined and jobs not yet thought of

➜ We are among the top 20 UK universities targeted by the largest number of top 100 graduate recruiters.*

➜ We are first in the UK for Graduate Prospects in Electrical & Electronic Engineering and for Computer Science**

➜ Over 300 companies a year offer jobs to students through the ECS Careers Hub

➜ In the most recent Destinations of Leavers from Higher Education statistics eleven ECS graduates reported starting salaries above £40k

➜ We are one of the top 25 UK universities for starting salaries**

We can help you build your dream CV

➜ Take advantage of our commercial partnerships with more than 160 ECS affiliated companies via work placements, internships and volunteering

➜ Network with top employers at our annual Engineering and Technology Careers fair, which attracted 85 leading companies in 2015

➜ Keep up to date with the latest news of our ECS Careers Hub, which includes a database of current opportunities

➜ Get advice from ECS alumni about future careers

➜ Specialise further with one of our postgraduate courses and gain a more in-depth knowledge of your subject to realise your ambitions

➜ Gather evidence of your achievements through our programme of personal development to complement your academic study

➜ Build your entrepreneurial skills by engaging with our Student Enterprise programme

OUR GRADUATES LAND JOBS AT HIGH-PROFILE ORGANISATIONS SUCH AS:

Altera	Goldman Sachs
Apple	Google
Amazon	Hawk-Eye
ARM	IBM
Audi	Imagination Technologies
BAE Systems	Jaguar Land Rover
Bloomberg	J P Morgan
BBC	London Transport
Broadcom	McLaren
China Telecoms	Microsoft
Cisco	Netcraft
Cobham Technologies	Ocado
Entrepreneur First	Rolls Royce
Ericsson Television	Samsung
Facebook	Sony
FactSet	STFC Technology

* The Graduate Market in 2016, produced by High Fliers Research
**Complete University Guide, 2017

Specialise further with a postgraduate degree

Careers information, advice and guidance

Career mentoring

Careers fairs

Network with top employers

Presentations and workshops

OPPORTUNITIES

Work placements & internships

Volunteering

Enterprise

⌂ **Find out more**
To learn how your Southampton Opportunity can get you ready for employment, visit
www.southampton.ac.uk/ecs/careershub

WHAT'S YOUR
AMBITION?

TO BE A CHARTERED ENGINEER WORKING IN POWER ENGINEERING

Rebekah Endersby
MEng Electromechanical Engineering, third year

In my degree, I focus on Power Engineering. As renewable energies become an ever increasing presence in our electricity network, systems that relied on coal and oil generation are no longer appropriate. It is important that Power Engineering is studied to ensure the Power systems evolve with the changes in generation. Transmission Networks are also studied in my degree as there are some issues with connections between offshore wind farms and mainland grid.

Through the Institute of Engineering and Technology Power Academy scheme, I have gained part sponsorship of my degree and summer work placements with National Grid that have been invaluable. I was also nominated to be the Student Representative for the whole scheme, meaning I have represented around 130 students and attend board meetings with all universities and companies involved in the scheme.

Find out more
about Rebekah Endersby's experience and one that could be waiting for you - visit
www.southampton.ac.uk/ecs

COURSE
OVERVIEW

Are you prepared to work at the top of your field? Our range of stimulating and cutting-edge ECS degree programmes will ensure you are a step ahead in the global jobs market.

Choose Southampton

- We are first in the UK for Graduate Prospects in Electrical & Electronic Engineering and for Computer Science. *Complete University Guide 2017*
- 99% of employed Electronics and Computer Science graduates are in professional / managerial jobs six months after graduating (DLHE)
- World-renowned academics and excellent industry-standard facilities
- Academics with Fellowships from the Royal Academy of Engineering and the Royal Society are involved in teaching of undergraduate students
- Electrical and electronic engineering were ranked number one in 1987 (THES) and are still in the top three today – nearly 30 years later
- First in the UK for the volume and quality of our research in Electrical and Electronic Engineering and 100% of our Computer Science research impact is recognised as world-leading or internationally excellent (REF 2014)
- Theory backed up by practical experience and industrial placements
- More elite UKESF scholarships awarded to ECS than to any other university

100%
MEng Computer Science students go on to professional/managerial work or study
Unistats 2016

100%
MEng Electrical Engineering students are satisfied with the quality of their course
Unistats 2016

Electrical and Electronic Engineering
1st
in the UK.
The Guardian University Guide 2017

Course Structure

All of our courses give you the opportunity to complete a year's industrial placement and study a modern language. Your lectures and tutorials will be backed up by experimental and project work in the laboratories.

Our courses are offered as:

- BEng (Bachelor of Engineering), BSc (Bachelor of Science) – three year courses
- MEng (Master of Engineering) and MComp (Master of Computing) – four year courses giving you a higher technical and professional qualification. Many programmes can also be offered with Industrial Studies. See page 39 for details.

Engineering Foundation Year

Designed for students without traditional entry qualifications, a Foundation Year provides an entry route to our computer science and engineering degrees. If you meet the required grades in your foundation year you then automatically progress onto your chosen degree programme. To find out more visit **www.southampton.ac.uk/foundationyear**

Course areas in ECS

- Aerospace Electronic Engineering
- Biomedical Electronic Engineering
- Computer Science and Software Engineering
- Electrical and Electronic Engineering
- Electrical Engineering
- Electronic Engineering
- Information Technology in Organisations
- Mechatronic Engineering
- Web Science

How will you learn?

You will be taught in a variety of ways including formal lectures and tutorials, coursework and practical laboratory sessions. Throughout your programme you will develop skills for the workplace through group activities and large design projects. In your later years you will complete industrially sponsored group design projects and learn to engineer professionally within a strict budget and deadline.

Flexible learning

Our Flexible Learning Programme lets you personalise your learning by choosing interdisciplinary modules or existing modules from other programmes such as entrepreneurship, law, management, mathematics and modern languages. For example, our Information Technology in Organisations programme can be taken with a range of business orientated modules.

Professional accreditation and awards

Our work has been recognised nationally. The relevant professional accreditation bodies for our degree programmes are the British Computer Society and the Institution of Engineering and Technology. We are one of only a handful of universities recognised as an Academic Centre of Excellence in Cyber Security Research by the UK Government research. We have also received the Athena SWAN Bronze Award for our commitment to tackle the problem of gender inequality in science.

Find out more
T: +44 (0)23 8059 2969
E: fpse-ugapply@southampton.ac.uk
www.southampton.ac.uk/ecs

Computer Science

Senior Admissions Tutor:
Dr Jonathon Hare

Start date: September 2017

Typical offers require the following

Entry requirements: 3 year BSc: AAA in three A Levels, including Mathematics (or equivalent qualifications)
4 year MEng: A*AA in three A Levels, including Mathematics (or equivalent qualifications)

Intake: 120

Language requirements:
IELTS 6.5 overall with at least 5.5 in each competency

Selection process: UCAS application

Accreditation:
British Computer Society and the Institution of Engineering and Technology

Our typical entry requirements may be subject to change.
Before you apply, please visit
www.ecs.soton.ac.uk/entryreq

Career destinations

Our graduates go on to gain jobs in a wide variety of companies including software development, media and communications, finance, internet services, research and security.

Find out more

T: +44 (0)23 8059 2969
E: fpse-ugapply@southampton.ac.uk
www.southampton.ac.uk/ecs/cs

At Southampton our Computer Science graduates have a world-leading reputation for creative solutions based on cutting-edge knowledge and state-of-the-art technical skills. Globally computer science systems, networks and applications affect our everyday lives in healthcare, business, entertainment and communications.

Our outstanding facilities and renowned teaching staff prepare our students to work in a wide variety of areas and fields. We are proud they are setting the agenda for tomorrow's ever-changing digital world.

Assessment

Practical skills are assessed through laboratories and project work (both individual and group), while theoretical skills and knowledge are assessed through coursework and exams.

Programme structure

BSc Computer Science

G400 | 3 years

This three-year programme will give you the grounding to work in any area of the computing industry. During the first two years you will develop the core and professional skills, knowledge and understanding that underpin computer science. In your third year you can tailor your programme to suit your interests and career aims. You will also work on an individual project with the potential to explore cutting edge technologies and innovative applications.

MEng Computer Science

G401 | 4 years, 5 years with industrial studies

This four-year programme prepares you for the next generation of systems and software by exploring hot research topics such as complexity theory, social media technology, or biologically inspired robotics. In the fourth year you will take part in a group design project working with a real industry customer or solving challenging problems through imaginative application of technology. The programme can also be offered with Industrial Studies. See page 39 for details.

MEng Computer Science with Artificial Intelligence

G4GR | 4 years

Taking specialist courses similar to those for G401, you will begin to understand the practical industrial applications of artificial intelligence and undertake individual research projects.

MEng Computer Science with Cyber Security

II10 | 4 years

This course will teach you the latest thinking in cyber security, including the concepts, principles, technologies and practices for addressing current and emerging cyber security threats and challenges.

MEng Computer Science with Distributed Systems and Networks
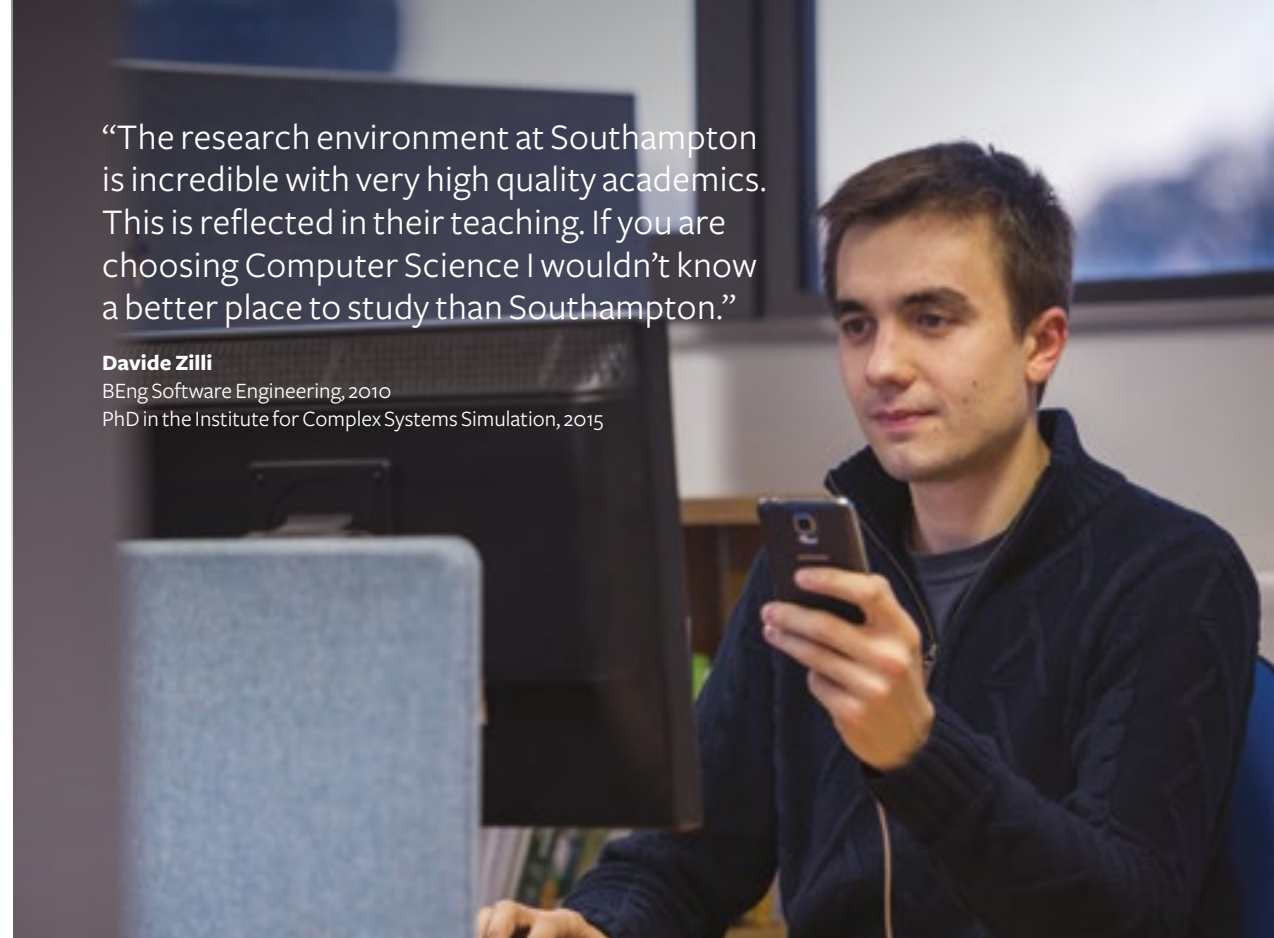
G4G5 | 4 years

Taking specialist courses similar to those for G401, you will begin to understand the practical industrial applications of distributed systems and networks, and undertake individual research projects.

"The research environment at Southampton is incredible with very high quality academics. This is reflected in their teaching. If you are choosing Computer Science I wouldn't know a better place to study than Southampton."

Davide Zilli
BEng Software Engineering, 2010
PhD in the Institute for Complex Systems Simulation, 2015

MEng Computer Science with Image and Multimedia Systems

G450 | 4 years

Taking specialist courses similar to those for G401, you will broaden your interests in image and multimedia systems through practical industrial applications, group work and individual design projects.

MEng Computer Science with Mobile and Secure Systems

G421 | 4 years

This course focuses on two of the most exciting areas of the emerging technologies. Special features include dedicated additional laboratory modules to familiarise you with hand-held, low-power devices using group gaming exercises and other investigative scenarios.

Core modules taken in Years 1 and 2

– Programming
– Algorithmics
– Professional Development
– Computer Systems
– Foundations of Computer Science
– Data Management
– Software Modelling and Design
– Distributed Systems and Networks
– Intelligent Systems
– Theory of Computing
– Programming Language Concepts
– Interaction Design
– Software Engineering Group Project

Optional modules in Years 3 and 4

We offer numerous optional modules that reflect the specialist areas of Computer Science and the key technology areas that will be critical in the future within the overall context of Electronics and Computer Science. See page 40 for further details.

Information Technology in Organisations (ITO)

Career destinations

Our graduates go on to gain jobs in a wide variety of industries and companies including IT consultancy, management and the finance sector.

Find out more

Overview

The ITO programmes provide students with a good theoretical and practical understanding of the application of computing technologies within an organisational setting. Although ITO's primary focus is on the technical perspective of ITO (including programing of these systems) the professional, commercial and managerial aspect of IT systems are also covered.

Assessment

Practical skills are assessed through laboratories and project work (both individual and group), while theoretical skills and knowledge are assessed through coursework and exams.

Programme structure

BSc IT in Organisations

G560 | 3 years

This three-year programme gives you a good grounding in the fundamental issues (technical and business) of IT in Organisations. You will look at the growing trends in e-business and e-commerce, the effects of IT on society, the security of IT systems, and the technology that underpins these activities.

MComp IT in Organisations

G500 | 4 years, 5 years with industrial studies

This four-year programme will give you a more advanced understanding of IT in Organisations and allows you to achieve Chartered IT Professional status in the shortest time. It addresses the more advanced technical aspects of IT in organisations and you can focus on having a management, technical or balanced portfolio of modules to suit your interests and career aims . You will complete a group design project, an individual research

project and a compulsory e-business strategy module. The programme can also be offered with Industrial Studies. See page 39 for details.

Core modules taken in Years 1 and 2

– Web Design
– Foundations of Computer Science
– Algorithmics
– Programming (Java)
– Business Information Systems
– Computational Systems
– Systems and Platforms
– Groups, Teams and Leaders
– Databases and Application
– Application Scripting (ooPhP)
– Networking in Organisations
– Commercial Aspect of IT
– Human Factors in Design
– Integrative Project
– Mathematics for ITO

Optional modules in Years 3 and 4

We offer numerous optional modules that reflect the specialist areas of interest in Information Technology in Organisations. These optional modules fit within the overall context of Electronics and Computer Science. See page 40 for further details.

ITO with a Minor

Information Technology in Organisations (ITO) offers students the option to undertake a minor alongside the major in ITO. A minor allows you to broaden out your degree by replacing your optional modules over the first three years with a dedicated set of modules for the minors. Currently on offer from ECS are minors in:

– Applied Economics
– International Relations
– Modern Languages
– Psychology
– Sustainability

Software Engineering

Career destinations

Our graduates go on to gain jobs in a wide variety of industries including software development, media and communications, finance, internet services, and security.

Find out more

Overview

Engineering high quality, secure and reliable software systems has never been so challenging. The modern world is driven by an astonishing variety of interconnected software, from phone apps to systems that control critical utilities and infrastructure.

At Southampton we produce sought-after graduates who can create the next generation of software systems and who go on to work with some of the world's biggest technology companies.

Assessment

Practical skills are assessed through laboratory and project work (both individual and group), while theoretical skills and knowledge are assessed through coursework and exams.

Programme structure

BEng Software Engineering

G4G6 | 3 years

This three-year programme allows you you to pursue a career in any area of the software industry. During the first two years you will develop the core and professional skills, knowledge and understanding that underpin software engineering. In your third year you can tailor your programme to suit your interests and career aims. You will also work on an individual project to take a piece of software from development to implementation and evaluation.

MEng Software Engineering

G600 | 4 years, 5 years with industrial studies

This four-year programme gives you the chance to learn how software engineering must adapt to deal with new technologies and challenges. In the fourth year you will take part in a group design project working with a real industry customer or solving challenging problems through the imaginative application of technology. The programme can also be offered with Industrial Studies. See page 39 for details.

Core modules taken in Years 1 and 2:

– Programming
– Algorithmics
– Professional Development
– Computer Systems
– Foundations of Computer Science
– Data Management
– Software Modelling and Design
– Distributed Systems and Networks
– Intelligent Systems
– Theory of Computing
– Programming Language Concepts
– Interaction Design
– Software Engineering Group Project

Optional modules in Years 3 and 4

We offer numerous optional modules that reflect the specialist areas of Software engineering and the key technology areas that will be critical in the future within the overall context of Electronics and Computer Science. See page 40 for further details.

Web Science

Career destinations

Web Science will equip you with
unique cross-cutting knowledge
and skills, marketable to a broad
range of employers and
employment sectors. We have
strong relationships with
employers, and our graduates are
particularly in demand for their
understanding of organisations
and their practical abilities in
the workplace.

Find out more

Overview

We are pioneering the development of
Web Science, a new discipline that
aims to provide a thorough
understanding of the Web as a social
and technical phenomenon. This
multidisciplinary course explores the
impact of the Web on society and
builds skills and expertise in the
technical underpinnings of the Web as
well as the social processes that have
shaped its evolution.

You will be taught by researchers at the
forefront of Web Science who are
tackling some of the Web's biggest
challenges and will benefit from our
excellent facilities, key partnerships
with major industries and world-
leading research base.

Assessment

Your theory will be assessed through
examinations and coursework, while
your practical experience will be
assessed by laboratory work, design
exercises and dissertations.

Programme structure

**BSc Web Science –
Computer Science**

I201 | 3 years

This three-year programme develops a
critical understanding of the Web, its
history and current trajectories of
development. You will specialise in
computational understanding and
analysis of the Web and will take
additional modules in programming
and scripting, data management
and the technical underpinnings of
the Web.

**BSc Web Science –
Social Science**

I200 | 3 years

You can choose this alternative
three-year pathway that offers
theoretical and methodological
expertise in the social scientific
understanding and analysis of the Web.

Core modules taken in Years 1 and 2

– Information, Technology and
  Social Change
– Programming
– Web Design
– Foundations in Social Theory
– Introduction to Quantitative
  Methods
– Web Agents, Actors and Agency
– Interdisciplinary Group Project
– Databases and Application
– Interaction Design
– Digital Literacies

In **Years 2 and 3** we offer
numerous optional modules visit
www.southampton.ac.uk/webscience
to find out more.

"Web Science at Southampton offers a unique view of the web and technology, with the benefits of great facilities and academics working at the cutting edge. Given how important the web is in our daily lives, it's a great opportunity to analyse society and technology literally changing before us."

Thomas Rowledge
BSc Web Science, first year

Aerospace Electronic Engineering

Career destinations

Our students are in high demand and are eligible to apply for industrial scholarships and paid work placements through the UK Electronics Skills Foundation. Career destinations include BAE Systems, Cobham, MBDA Missile Systems and Selex ES.

Find out more

Overview

Modern aerospace systems rely heavily on electronics and avionics. The demand for these skills is increasing with the advent of applications for autonomous unmanned flying vehicles, the development of the 'more electric aircraft' and increased use of GPS to enhance the efficiency and safety of flight.

This programme is unique in offering students both the fundamental and specialised knowledge needed to equip them for a career in the aerospace industry. The industrial experience of teaching staff includes work with NASA and interplanetary missions, as well as teaching courses to ESA and industry staff on space systems engineering.

Assessment

Laboratories, design exercises and projects are used to assess the practical aspects, while coursework and exams assess the theoretical aspects.

Programme structure

BEng Aerospace Electronic Engineering

H403 | 3 years

This degree will enable you to work in the aerospace engineering or electronics industries. It will provide you with both the breadth and depth in the electronics used in aircraft and spacecraft engineering systems. During the first two years, you will develop the skills, knowledge and understanding that underpin aerospace electronic engineering. In your third year, you can choose from a wide range of optional modules to tailor your degree to suit your interests and career aims. You will also work on an individual project to build a challenging and unique aerospace electronic system.

MEng Aerospace Electronic Engineering

H402 | 4 years, 5 years with industrial studies

This programme builds on our BEng Aerospace Electronic Engineering, developing the skills you will need to become a leader in the industry. The aim is to give you a sound basis of the fundamentals involved in aerospace electronic engineering while also offering a wide range of exciting, varied and multidisciplinary options which nevertheless are directly related to aerospace systems or alternatively mind-stimulating and might be applied to aerospace systems in the future. You will further customise your degree by selecting fourth-year options from a range of specialist technical modules. This is accompanied by project work challenging you to solve a problem for a real company or to transfer technology from the University to industrial practice. This degree is also available with a year in industry, see page 39 for details.

Typical course content
– Electronic circuits and systems
– Flight mechanics and aerospace systems
– Radar techniques and applications
– Aerospace electronics design
– Guidance, navigation and control
– Space systems engineering
– Digital systems and microprocessors
– Programming and computer engineering
– Devices and solid state electronics
– Mathematics

Biomedical Electronic Engineering

Career destinations

Our students are in high demand and are eligible to apply for industrial scholarships and paid work placements through the UK Electronics Skills Foundation. Career destinations include Renishaw, Sharp, Philips, Sphere Medical, Boston Scientific and Cambridge Design Partnership.

Find out more

Overview

Biomedical Electronic Engineering is the application of state of the art electronic engineering theory and practice to develop new medical and healthcare technologies. Innovative digital health solutions are required to address the growing pressure on healthcare providers created by an aging population and an increase in chronic disease. This degree will train engineers to understand the underlying principles of electronics and biomedicine to develop new healthcare technologies such as home monitoring and intelligent diagnostics and treatment.

Assessment

Laboratories, design exercises and projects are used to assess the practical aspects, while coursework and exams assess the theoretical aspects.

Programme structure

BEng Biomedical Electronic Engineering

BB90 | 3 years

This three-year programme will provide you with a detailed knowledge of electronics and biomedicine, together with the ability to apply engineering principles to medicine and healthcare. Excellent experimental facilities in both Electronics and Life Sciences laboratories will develop your practical skills, including designing a health and wellness monitoring platform. An individual project based on a real-life application will expose you to the challenges of developing new biomedical electronic systems.

MEng Biomedical Electronic Engineering

B90B | 4 years, 5 years with industrial studies

This four-year programme builds on our BEng Biomedical Electronic Engineering, developing the management skills you will need to become a leader in industry. You will engage with an industrial or academic customer to solve a real-world challenge in a group design project, and customise your degree with a range of specialist technical modules. This degree is also available with a year in industry, see page 39 for details.

Typical course content
– Electronic circuits and systems
– Healthcare technologies design project
– Molecular basis of life
– Physiology and neuroscience
– Biomedical control and signals
– Digital systems and microprocessors
– Programming and computer engineering
– Devices and solid state electronics
– Electrical materials and fields
– Mathematics

Senior Admissions Tutor:
Dr Alex Weddell

Start date: September 2017

Typical offers require the following

Entry requirements: 3 year BEng:
AAA in three A Levels (or equivalent qualifications), including Mathematics and Physics. Physics may be substituted by Further Mathematics, Computer Science, or Electronics

4 year MEng: A*AA in three A Levels (or equivalent qualifications), including Mathematics and Physics. Physics may be substituted by Further Mathematics, Computer Science, or Electronics

Intake: 45

Language requirements:
IELTS 6.5 overall with at least 5.5 in each competency

Selection process: UCAS application

Funding: Scholarships and paid industrial placements are available from the UK Electronics Skills Foundation and the Institution of Engineering and Technology.
www.ecs.soton.ac.uk/money

Accreditation: The Institution of Engineering and Technology

Our typical entry requirements may be subject to change.
Before you apply, please visit
www.ecs.soton.ac.uk/entryreq

Career destinations

Our graduates go on to gain jobs in a wide variety of industries including communications, energy, transport, high-tech manufacturing, and security.

Find out more

T: +44 (0)23 8059 2969
E: fpse-ugapply@southampton.ac.uk
www.southampton.ac.uk/ecs/ele

Electronic Engineering

Overview

Southampton has an unrivalled reputation in Electronic Engineering and our graduates are employed worldwide in highly prestigious positions. They use the skills and knowledge they developed in Southampton to engineer the electronic signals that pervade the world around us.

From cutting-edge electronics, computer processors and artificial intelligence, to nanoscale materials and communication techniques – our students have a hand in it all.

Assessment

Laboratories, design exercises and projects are used to assess the practical aspects, while coursework and exams assess the theoretical elements.

Programme structure

BEng Electronic Engineering

H610 | 3 years

This three-year programme will enable you to work in any area of the electronics industry. During the first two years you will develop the skills, knowledge and understanding that underpin electronic engineering. In your third year you can tailor your programme to suit your interests and career aims. You will also work on an individual project to build a challenging and unique electronic system.

MEng Electronic Engineering

H603 | 4 years

HH61 | 5 years with industrial studies

This four-year programme develops the management skills needed to become a leader in the electronics industry. In the fourth year you will be challenged to solve real problems for an industrial customer or to transfer technology from the University to

industrial practice. The programme can also be offered with Industrial Studies. See page 39 for details.

MEng Electronic Engineering with Artificial Intelligence

H6G7 | 4 years)

This degree focuses on the design and implementation of state-of-the-art artificial intelligence techniques, with consideration of image processing and computer vision, machine learning, robotic systems, computational biology and finance, as well as complexity. The programme includes core content from H603.

MEng Electronic Engineering with Computer Systems

H6G4 | 4 years

Explore the design, synthesis, fabrication and efficient programming of computer systems at a fundamental architectural level. Specialist topics include real-time computing and embedded systems, advanced computer architecture, and system-on-chip design techniques. The programme includes core content from H603.

MEng Electronic Engineering with Mobile and Secure Systems

H691 | 4 years

This degree focuses on the design and implementation of secure electronic systems that maintain the confidentiality, integrity and authenticity of information, while allowing mobility and interoperability with external wireless networks. Advanced topics include cyber security, safety-critical systems, automated software verification, and cryptography. The programme includes core content from H603.

In a second year group design project, students design and simulate their own integrated circuit (or 'chip'), seeing it through from specification to fabrication. They must probe their silicon wafers to test and evaluate their designs.

MEng Electronic Engineering with Nanotechnology

H611 | 4 years

Explore the underpinning physics of state-of-the-art nanoscale electronic, photonic, fluidic, bio-electronic and electromechanical materials and devices, as well as their design and fabrication. Specialist topics on this degree include nanoelectronic devices, green electronics, and bionanotechnology. The programme includes core content from H603.

MEng Electronic Engineering with Photonics

H680 | 4 years

This degree specialises in the design and fabrication of optical fibres, as well as semiconductor light sources and detectors. You will study the design and implementation of signal processing techniques, circuits and systems for efficiently modulating information onto the optical fibre for the purpose of optical communication and other applications of photonics. The programme includes core content from H603.

MEng Electronic Engineering with Wireless Communications

H641 | 4 years

The advanced topics for this degree cover the characteristics of electromagnetic wave propagation in radio channels. You will specialise in the design and implementation of signal processing techniques, circuits and systems for efficiently and reliably modulating information onto the channel for the purpose of wireless communication networking. The programme includes core content from H603.
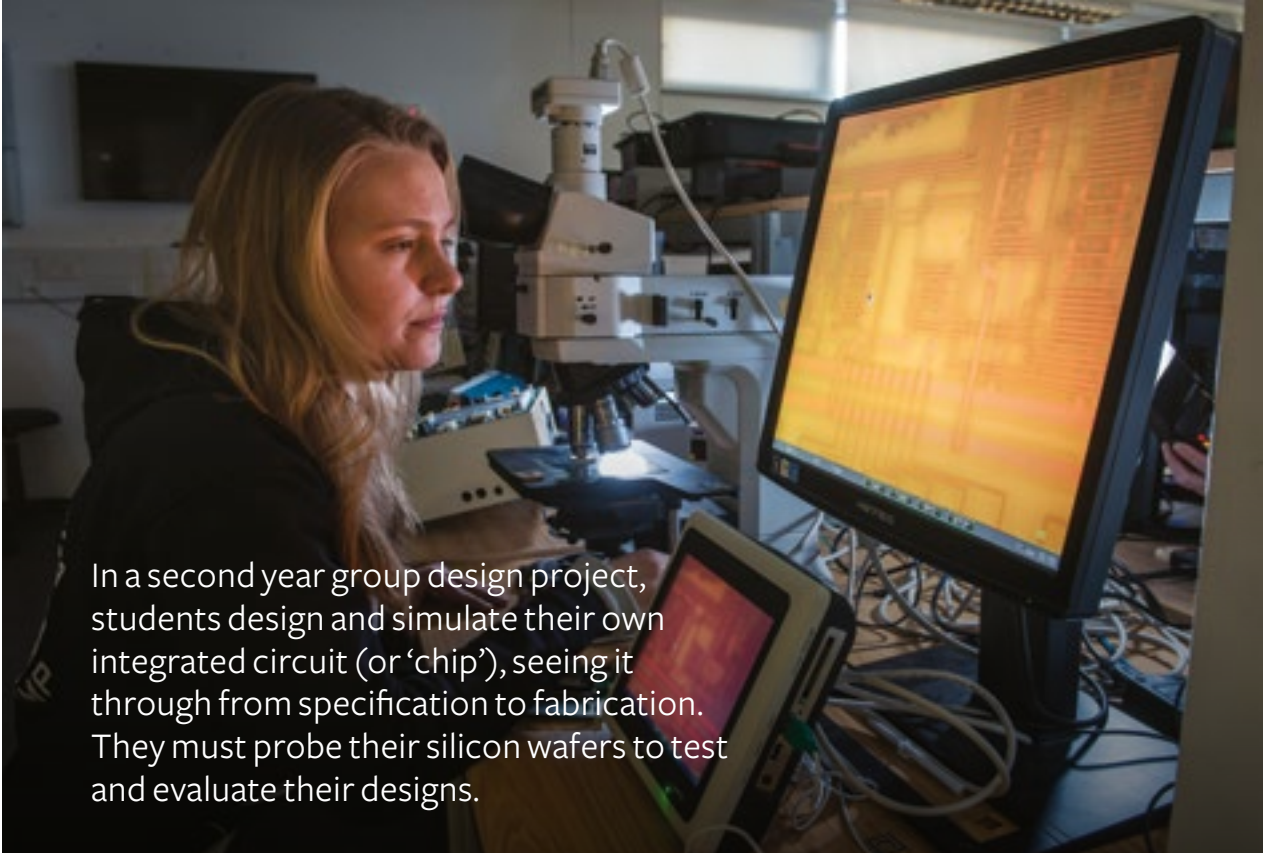
Core modules taken in Years 1 and 2

– Electrical Materials and Fields
– Mathematics for Electronic and Electrical Engineering
– Electronic Circuits
– Programming
– Digital Systems and Microprocessors
– Advanced Programming
– Solid State Devices
– Electronic Systems
– Mathematics I and II

– Electromagnetism for Communications
– Control and Communications
– Digital Systems and Signal Processing
– Mathematics for Electronics and Electrical Engineering Part II
– Devices
– Computer Engineering
– Electronic Design
– Advanced Electronic Systems

Optional modules in Years 3 and 4

We offer numerous optional modules that reflect the specialist areas of Electronic Engineering and the key technology areas that will be critical in the future within the overall context of Electronics and Computer Science. In addition to the individual project, students select up to five modules from around 25 technical options plus numerous non-technical options in Year 3. In addition to the group project, MEng students select up to five modules from around 45 technical options in Year 4. See page 40 for further details.

Career destinations

Our graduates go on to gain jobs in a wide variety of industries involved in power generation and distribution, communications, microelectronics, renewable energy, transport or security.

Find out more

T: +44 (0)23 8059 2969
E: fpse-ugapply@southampton.ac.uk
www.southampton.ac.uk/ecs/eee

Electrical and Electronic Engineering

Overview

Many aspects of our modern life are influenced by electrical and electronic engineering including energy, healthcare, entertainment, commerce, communications manufacturing and the environment.

This flexible programme combines our extensive experience in teaching highly regarded Electrical Engineering and Electronic Engineering degrees. You will gain a broad range of skills and have the flexibility to tailor your course to suit your interests in Electrical and Electronic Engineering.

Assessment

Laboratories, design exercises and projects are used to assess the practical aspects, while coursework and exams assess the theoretical aspects.

Programme structure

BEng Electrical and Electronic Engineering

H600 | 3 years

This three-year programme gives you the strong fundamental skills to become a good electrical and electronic engineer. In the third year you can tailor the course to suit your interests or career aims. You will also get involved in the design, simulation, building and testing of an electrical and/or electronic system as part of your individual project in collaboration with an academic who is also an active researcher.

MEng Electrical and Electronic Engineering

H602 | 4 years

HH60 | 5 years with industrial studies

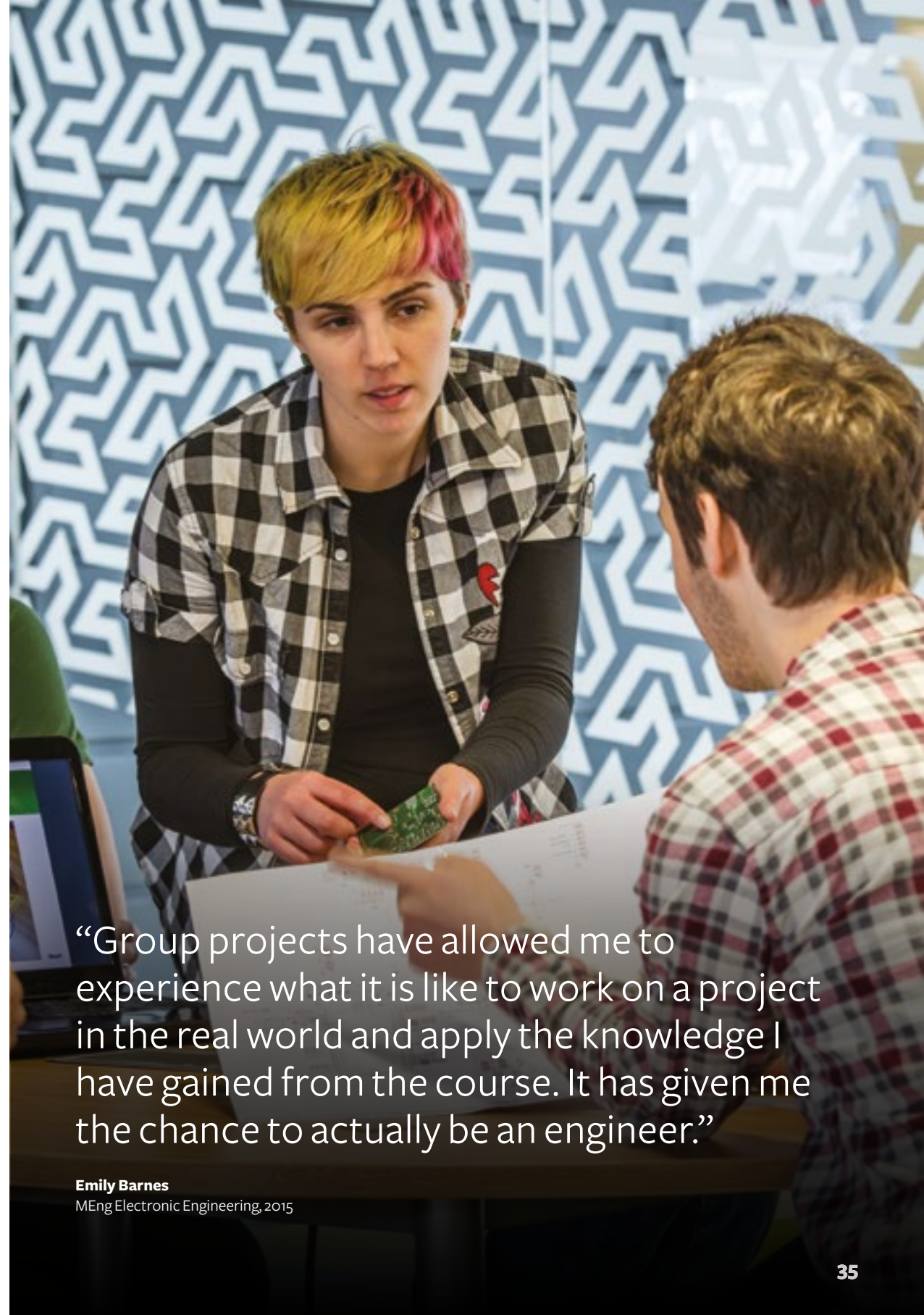This four-year programme will provide you with the necessary management skills to become an industry leader. You will test and further develop your technical skills and learn and develop management skills by working in a project team to tackle a real engineering problem. You will further develop your knowledge in electrical and electronic engineering through the range of optional modules available across ECS. The programme can also be offered with Industrial Studies. See page 39 for details.

Core modules taken in Years 1 and 2

– Electrical Materials and Fields
– Electronic Circuits
– Electronic Systems
– Solid State Devices
– Programming
– Digital Systems and Microprocessors
– Mathematics
– Power Electronics and Drives
– Electromagnetism for Electrical and Electronic Engineering
– Control and Communications
– Digital Systems and Signal Processing
– Circuits and Transmission
– Electrical and Electronic Engineering Design

Optional modules

In **Years 1 and 2,** Electrical and Electronic Engineering students also pick an optional module in their area of interest (for example Advanced Programming, Devices, Electrical Machines, Materials, Computer Engineering, Mechanics or Advanced Electronic Systems). In **Years 3 and 4** we offer numerous optional modules that reflect the specialist areas of interest in Electrical and Electronic Engineering and the key technology areas that will be critical in the future, within the overall expertise of ECS. See page 40 for further details.

"Group projects have allowed me to experience what it is like to work on a project in the real world and apply the knowledge I have gained from the course. It has given me the chance to actually be an engineer."

Emily Barnes
MEng Electronic Engineering, 2015

The right balance between theory and practice.

At Southampton we strive to make a careful balance between theory and practice, enabling you to both 'know' and 'do' your subject. Our students get the opportunity to try out the theory that they're learning in lectures through a mixture of lab work, design exercises, coursework and projects – all designed to enthuse, teach and stretch. Our labs are regularly updated and revised, to give you the facilities to enable you to maximise your potential .

"Scholarships and paid industrial placements are available from the UK Electronics Skills Foundation and the Institution of Engineering and Technology (including their Power Academy scheme)"

Toby Isaacs
MEng Electrical Engineering, fourth year

Key information

Career destinations

Our graduates go on to gain jobs in the electricity supply industry, major electrical and power companies, government departments, transport industry and the security industry. Or you may choose a career in research, international sales or management

Find out more

Electrical Engineering

Overview

Electrical engineering concerns anything that involves electrical power, from the electromagnetism of superconducting systems to the principles of power generation and transmission, and the development of more efficient and sustainable energy sources.

At Southampton we will provide you with the analytical skills to design and develop the technology of tomorrow using our outstanding experimental facilities, including our high-voltage laboratory.

Assessment

Examination and coursework ensure rigorous assessments of theoretical knowledge. Laboratories, design exercises and projects are used to test practical aspects.

Programme structure

BEng Electrical Engineering
H620 | 3 years

This degree covers all topics related to electrical power, from fundamentals of power generation and transmission, the control theory to the development of more efficient and sustainable energy sources, and superconducting electric cables. Core technical subjects are covered in year one, followed by a focus on specialised subjects in year two and the opportunity to tailor your studies according to your interests in year three. Individual project work with one of our research groups will allow you to work at the frontier of knowledge.

MEng Electrical Engineering
H601 | 4 years
HH62 | 5 years with industrial studies

This four-year programme includes more advanced engineering topics, management studies, industrial law,

and group projects. You will tackle wide-ranging engineering challenges and gain industrial experience through vacation employment. In Year 4 you will get the chance to do a group project, either working with a real customer from industry or transferring technology from the University into industrial practice with a chance to exercise self and team management skills. The programme can also be offered with Industrial Studies. See page 39 for details.

Core modules taken in Years 1 and 2

- Electromagnetic Fields and Applied Electromagnetism
- Electric and Electronic Circuits
- Analogues and Digital Electronics
- Solid State Devices and Microprocessors
- Electrical Materials
- Programming
- Mechanics
- Mathematics
- Control
- Engineering Design
- Electrical Machines
- Power Electronics and Drivers
- Power Systems Technology
- High Voltage Engineering
- Exploitation of Electrical and Electronic Technology

Optional modules in Years 3 and 4

We offer numerous optional modules that reflect the specialist areas of electrical engineering and the key technology areas that will be critical in the future within the overall context of Electronics and Computer Science. For example, MEng students select up to five modules from 40 technical options in Year 4. See page 40 for further details.

Career destinations

Our graduates go on to gain jobs in the electricity supply industry, major electrical companies, government departments, transport industry and the security industry. Or you may choose a career in research, international sales or management

Find out more

T: +44 (0)23 8059 2969
E: fpse-ugapply@southampton.ac.uk
www.southampton.ac.uk/ecs/me

Mechatronic Engineering

Overview

Mechatronic engineering meets the increasing demand from industry for engineers with cross-disciplinary skills in the fields of robotics, flexible manufacturing, electromechanical power systems and electrical power transmission and distribution systems. The degree is a mixture of mechanical systems engineering, electrical engineering, computer science and control theory.

You will investigate the problems of combining electrical and mechanical components into mechatronic devices or systems such as micro-machines, electric vehicles and powerful industrial robots.

Assessment

You will be assessed by examinations, coursework, essays and laboratory and design projects.

Programme structure

BEng Mechatronic Engineering

HH36 | 3 years

This three-year programme will ensure you are versatile enough to deal with systems that have both mechanical and electrical elements. Your learning will be supported by excellent experimental facilities in our Electrical and Electronics Teaching Laboratories and Control Laboratory. Project work begins in the first year and continues with design and build tasks in every year of your degree. You will get the chance to exercise your creative talent, deploy your skills and exploit the knowledge gained to produce electromechanical devices.

MEng Mechatronic Engineering

HHH6 | 4 years

H36H | 5 years with industrial studies

This four-year programme includes more advanced engineering topics and gives you the chance to learn the wide range of disciplines required for a challenging career including, management studies and law. In Year 4 you will get the chance to do a group project, designing and constructing a product to meet a real world need. This will build your confidence and your skills to deliver working prototypes. You will also gain industrial experience through vacation employment. The programme can also be offered with Industrial Studies. See page 39 for details.

Core modules taken in Years 1 and 2

– Electromagnetic Fields

– Electromechanical Energy Conversion

– Electric and Electronic Circuits

– Analogues and Digital Electronics

– Electrical Materials

– Solid State Devices and Microprocessors

– Programming

– Mechanics

– Mathematics

– Control

– Engineering Design

– Electrical Machines

– Power Systems Technology

– Robotics and Electromechanical Design

– Exploitation of Electrical and Electronic Technology

Optional modules in Years 3 and 4

We offer numerous optional modules that reflect the specialist areas of mechatronic engineering and the key technology areas that will be critical in the future within the overall context of Electronics and Computer Science. For example, MEng students select up to five modules from 40 technical options in Year 4. See page 40 for further details.

Degrees with Industrial Experience

Through its dedicated Careers Hub and strong relationships with employers, ECS provides enviable opportunities for students to gain industrial experience, including summer placements.

Students on our main MEng and MComp programmes may also apply to take a year in industry with one of our recognised partner companies and to graduate with an MEng or MComp degree with Industrial Studies.

A year in industry - sometimes known as a placement year, or sandwich year - is a great way to give you a competitive edge among graduate recruiters by showing you can relate your academic skills and knowledge to contemporary industrial practice. It can help you to connect with future employers, add value to your CV or launch your career in a new-found direction, as well enabling you to develop business and team-working skills in your chosen industry.

The year in industry is taken after Year 2 or Year 3 and is assessed by academics and industry experts. During the year you will continue to have the support of the University with regular contact between you and the ECS team. There are reduced fees while you are on placement and you will receive a salary from the company for that year.

Courses with Industrial Studies – apply direct

– MEng Electronic Engineering

– MEng Electrical and Electronic Engineering

– MEng Electrical Engineering

– MEng Mechatronic Engineering

Applications for these programmes should be made online through the Universities and Colleges Admissions Service (UCAS).

Courses with Industrial Studies – apply on course

– MEng Aerospace Electronic Engineering

– MEng Biomedical Electronic Engineering

– MEng Computer Science

– MComp in IT in Organisations

– MEng Software Engineering

If you are interested in these programmes you should apply for the MEng or MComp as normal, and then apply to transfer to the Industrial Studies pathway during the second or third year of your degree. Acceptance is based on academic performance during your course and selection by a suitable employer.

"My work experience placement at a wearable technology company in London showed me the variety of ways that I can apply my technical, writing, communication, and entrepreneurial skills. I also developed skills in networking, project management and faster working styles which helped my studies in working smarter, efficiently and finding a good work / social balance."

Olivia Ojuroye
BEng Electronic Engineering with Artificial Intelligence, 2015
PhD in Flexible Circuits for Wearable E-Textiles, first year

Optional Modules

As well as your core modules you will also be able to choose from an extensive range of optional modules that reflect the specialist areas of your programme and the key technology areas that will be critical in the future within the overall expertise of ECS. Here are some of the subject areas available to you; full details for each programme can be found on our website:

Agent Based Computing	Nanoelectronics
Analogue and Digital Electronics	Nanotechnology
Artificial Intelligence	Online Social Networks
Biomedical Technology	Optoelectronics
Computational Finance	Photonics
Computer Vision	Power Electronics
Critical Systems	Power Transmission and Distribution
Cryptography	Principles and Practice of Computer Graphics
Cyber Security	Programming Languages
Distributed Systems	Quantum Devices and Technology
E-Business Strategy	Robotic Systems
Embedded Systems	Secure Systems
Games Design and Development	Sensors
High Voltage Systems	Serious Games
Integrated Circuits	Silicon Photonics
Intelligent Agents	Simulation
Intelligent Algorithms	System on Chip
Image Processing	Web Science
Machine Learning	Web Technology
Metamaterials, Nanophonics and Plasmonics	Wireless and Mobile Networks
Micro Electromechanical Machines	Wireless and Optical Communications

You can also choose from options offered elsewhere in the University such as Entrepreneurship, Law, Management, Mathematics and Modern Languages. As part of its Flexible Learning Programme, the University has recently developed a range of interdisciplinary modules that also allow you to study subjects such as American Democracy, Gender and Society, Human Origins, The Living Earth, Philosophy of Science, or Twentieth Century Music.

**⌕ Find out more
www.southampton.ac.uk/ecs/UGcourses**

T: +44 (0)23 8059 2969
E: fpse-ugapply@southampton.ac.uk

PROMOTING WOMEN IN SCIENCE AND ENGINEERING

In ECS we are proud to have recently received the Athena SWAN Bronze Award recognising our work in tackling the problem of gender inequality in science.

This national achievement reflects our commitment to ensure women are encouraged into an area that has historically been dominated by men.

In ECS our female academics and students are already showing the success that women can have in the fields of Electronics and Computer science.

Our female academics are world-renowned for their work and research, including Professor Dame Wendy Hall, a pioneer of the Web, who is dedicated to raising the profile of women in Electronics and Computer Science.

Many of our female students are also accomplishing great things in the field; Dr Reena Pau is just one of our success stories. After her BSC in Information Technology in Organisations, she stayed on to do a PhD focusing on computer science experience and how get girls into computing, been Coordinator of women's networking group Theano, a research fellow, and is now Outreach Coordinator for ECS, winning a Women in Science, Engineering and Technology (WiSET) Award for increasing the visibility of women in STEM.

In ECS we actively promote diversity across our courses. A Diversity Committee supports training and career coaching for women, while ECS Women was started by our students to support women across all levels. The group takes an active part in conferences promoting females in science, engineering, and mathematics (STEM) subjects, and organises events to improve employability such as self-confidence building, CV and interview workshops, and network meetings.

ECS was also instrumental in instigating the formation of the University's Theano networking group that aims to promote the advancement of women in science, engineering and technology in higher education. It also regularly takes part in outreach initiatives in schools and colleges such as Think IT with IBM.

Athena SWAN Bronze Award

**⌕ Find out more
www.southampton.ac.uk/ecs/athenaswan**

YOUR STUDENT EXPERIENCE

Our six campuses all offer a friendly, vibrant and diverse atmosphere for work and leisure.

You can socialise with friends in one of our bars or cafés on campus and in our halls of residence, as well as in the city of Southampton

Campuses

As an ECS student all of your work and lectures will be based at the main Highfield Campus, in the north of Southampton. Set in green and pleasantly landscaped surroundings, it is an easy walk from the city centre. Here you will find new and refurbished student facilities such as the Students' Union, the Jubilee Sports Centre, the Hartley Library, a 330-seat Uniplex cinema and three leading arts venues: the Nuffield theatre, the Turner Sims concert hall and the John Hansard gallery. There is also a range of cafés and restaurants, a bookshop, a post office and four major banks.

We have six other sites – our new Southampton Boldrewood Innovation Campus; Avenue Campus; Southampton General Hospital; the National Oceanography Centre, Southampton; Winchester School of Art; and our branch campus for engineering in EduCity, Iskandar, in Malaysia.

Social life

Run by students for students, the Students' Union offers a wide range of services and opportunities for you to get the most out of your free time.

– Experience Freshers' – a full programme of activities to help you settle in

– We've got over 350 student groups (sports clubs and societies) that you can join, from archery, quidditch and performing arts to debating and life drawing

– Help local people: get involved in community volunteering projects and fundraising

– Socialise with friends in one of our bars or cafés on our campuses and in our halls of residences

– See high-profile acts, from Jess Glynne to Sub Focus, or have a quiet evening with friends; the Union has something for everyone, all year round

– Catch a film in our 330-seat cinema

– Dance the night away in our large venue for big events and gigs

– Become a DJ or director at Surge Radio and SUSUtv

– Try out journalism for the *Wessex Scene* or *The Edge* magazines

01 Avenue Campus
02 National Oceanography Centre Southampton
03 Well-equipped kitchens
04 The Bridge Bar
05 Try Taekwondo

Accommodation

Get the best out of your student life; stay in one of our 6,800 student rooms in halls. You can choose from a range of room types that includes a new development of over 1,400 rooms in Southampton city centre.

Live in either self-catered halls of residence with well-equipped communal kitchens, or part-catered accommodation where you enjoy the benefits of breakfast and evening meals throughout the week, plus some other meals at the weekend.

If you are a registered first-year undergraduate student new to the University, starting a full-time course, with no dependants, you will be guaranteed an offer of halls accommodation as long as you fulfil the full criteria of the guarantee, which includes applying before 1 August.

To uphold the guarantee, in years of exceptional demand we may offer accommodation in a twin shared room at the start of the academic year for a short period of time.

For more information on our guarantee to you, visit www.southampton.ac.uk/guarantee

⬀ Find out more

www.southampton.ac.uk/ life

APPLYING AND FUNDING

We realise that going to university is a significant investment, so we'll ensure you have all the information you need to make an informed decision.

How and when to apply

– Applications should be submitted via UCAS (www.ucas.com)

– Our institution code is S27 and our code name is SOTON

– Read our Admissions Policy on our website

– The deadline for medicine is 15 October

– The deadline for all other programmes for UK and EU applicants is 15 January

– For international applicants, the deadline is 30 June, although we strongly advise you to apply as early as possible as some courses may no longer have vacancies after the January deadline

– UCAS will automatically forward your application to us and we will let you know when we have received it. For more information, visit www.southampton.ac.uk/apply

Tuition fees and funding

The University will set fees for 2017/18 when the government establishes limits for tuition fees. For 2016/17, the University set the tuition fee for UK students at £9,000 and we offer a large number of generous fee waivers and bursaries for eligible students.

For UK students from lower income families, these financial packages will be based on household income supplied to us by the Student Loans Company.

Your tuition fee may cover compulsory course costs, such as field trips and laboratory clothing; however a contribution may be necessary towards certain elements. Please check with the Admissions team for more details.

Visit our website for the latest information on tuition fees before you submit your UCAS form for entry in the 2017/18 academic year. Students who have applied for a deferred place in 2016/17 will be eligible for the 2017/18 tuition fees and support.

If you are a UK student you can apply for loans to help pay for both fees and maintenance. For more details, visit **www.southampton.ac.uk/money**

Channel Islands/Isle of Man student fees

Fees are set by the islands' governments and UK universities are notified of the levels in the spring prior to the academic session in which students commence their programme of study.

International student fees for 2017

Tuition fees for all ECS programmes (including Foundation Year) will be £19,725 per year.

Fixed fees

International students commencing their programme of study in 2017, will pay the same fixed fee for each year of their programme, with the exception of programmes where a combination of clinical and non-clinical fees apply. In these instances, the non-clinical fixed fee will apply for years one and two, and the clinical fixed fee will apply for the remainder of the programme.

Scholarships and bursaries

We offer a variety of scholarships and progression awards to the most talented students across our subject areas. For full eligibility criteria and up-to-date information, visit **www.southampton.ac.uk/scholarships**

We also offer a range of bursaries designed to help UK undergraduate students in the most financial need. For more details and up-to-date information, visit **www.southampton.ac.uk/bursaries**

INTERNATIONAL STUDENTS

Join us and students from more than 135 different countries at Southampton.

Living and studying in a different country has its own unique challenges. We make student entry straightforward, offer attractive scholarships to eligible applicants, help you settle into your new life and advise you on all aspects of living in the UK.

Our network of services and advisors ensure that your studies and life at Southampton is as productive and stress-free as possible.

International Office

Staff from our International Office attend educational exhibitions around the world as well as making numerous visits overseas and to colleges in the UK. If you are unable to visit us in Southampton, make sure you book an appointment to meet us at one of the exhibitions or join us on a virtual open day.

You will find a quick introduction to the University on our website, which is available in other languages. You can also view web pages with specific information for students from over 50 countries.

To join us on a virtual open day, visit **www.southampton.ac.uk/virtualopenday**

Welcome Programme

In September each year, we arrange the Welcome Programme, which helps you settle into life here. The week includes general events to introduce you to our facilities, subject-specific events to begin your academic induction and a range of social and cultural activities.

During the week, you will meet other undergraduate students and explore the University and the city, so that you know where to worship, relax and shop. You will also meet current international students who will be able to give you good advice.

Meet and Greet

We organise a free Meet and Greet service for all new international and EU students in September each year. Our representatives meet you at Heathrow or Gatwick Airport and transport you directly to your accommodation. You can register for both the Service and the Welcome Programme from July on our website.

Visas

Before you join us, find out about the UK's immigration procedures. Do this well in advance of your arrival in the UK. Our website provides information on student visas, police registration, working in the UK and has links to other useful websites.

For more information, visit **www.southampton.ac.uk/visa**

International scholarships

We offer a number of subject-specific scholarships and bursaries to international students. These are based on academic merit and vary depending on the subject.

English language requirements

All our programmes are taught in English and all applicants will be required to demonstrate their ability to express themselves in the English language to a sufficient standard. Applicants not holding a GCSE in English at grade C (or equivalent) may take one of our approved Secure English Language Tests (SELTs). These currently include IELTS, TOEFL, Pearson PTE (Academic), the Cambridge Advanced and Proficiency tests, and the Trinity College London ISE test.

Pre-sessional programmes

The University offers a wide range of pre-sessional programmes for international students who are planning to come to the UK for undergraduate or postgraduate study at the University of Southampton.

These programmes will help you develop the English language skills you will need to follow a degree course or undertake research at a British university. For more information, please visit **www.southampton.ac.uk/presessional**

HOW TO FIND US

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TERMS & CONDITIONS

The University's Charter, Statutes, Regulations and Policies are set out in the University Calendar and can be accessed online at www.calendar.soton.ac.uk

Terms of use

This brochure does not constitute an offer or invitation by the University of Southampton to study at Southampton. This brochure provides an overview of the University and life at Southampton, along with information about all the undergraduate programmes available at the time of publication. It is provided for information purposes only. Relevant weblinks are shown throughout the brochure. Please also consult the programme information online for further details or for any changes that have appeared since first publication of the brochure.

The information contained in the brochure, welcome guides or on our websites is subject to change and may be updated by the University from time to time to reflect intellectual advances in the subject, changing requirements of professional bodies and changes in academic staff members' interests and expertise. Changes may also occur as a result of monitoring and review by the University, external agencies or regulators.

1. Change or discontinuance of programmes

The University of Southampton will use all reasonable efforts to deliver advertised programmes and other services and facilities in accordance with the descriptions set out in the brochure, student handbooks, welcome guides and website. It will provide students with the tuition and learning support and other services and facilities so described with reasonable care and skill.

We undertake a continuous review of our programmes, services and facilities to ensure quality enhancement. We are also largely funded through public and charitable means and are required to manage these funds in an efficient and cost-effective way for the benefit of the whole of the University community.
We therefore reserve the right where necessary:

– to alter the timetable, location, number of classes, content or method of delivery of programmes of study and/or examination processes, provided such alterations are reasonable;

– to make reasonable variations to the content and syllabus of programmes of study (including in relation to placements);

– to suspend or discontinue programmes of study (for example, because a key member of staff is unwell or leaves the University);

– to make changes to our Statutes, Ordinances, Regulations, policies and procedures which we reasonably consider necessary (for example, in the light of changes in the law or the requirements of the University's regulators). Such changes if significant will normally come into force at the beginning of the following academic year or, if fundamental to the programme, will normally come into force with effect from the next cohort of students;

– to close programmes of study or to combine or merge them with others (for example, because too

few students apply to join the programme for it to be viable).

If the University closes, discontinues or combines a programme of study or otherwise changes a programme of study significantly (the "Change"), the University will inform applicants (or students where relevant) affected by the Change at the earliest possible opportunity.

a If the Change comes into force before the University has made an offer of a place or **before** an applicant has accepted an **offer** of a place, an applicant will be entitled to withdraw his or her application, without any liability to the University, by informing the University in writing within a reasonable time of being notified of the Change.

b. If the Change comes into force **after** an **offer** has been accepted but prior to the student **enrolling**, the student may either:

(i) withdraw from the University and be given an appropriate refund of tuition fees and deposits, or

(ii) transfer to another available programme (if any) as may be offered by the University for which the student is qualified.

If in these circumstances the student wishes to withdraw from the University and to apply for a programme at a different university, the University shall use its reasonable endeavours to assist the student.

c. If the Change comes into force **after** a student has **enrolled**, the University will use reasonable endeavours to teach the programme out but cannot guarantee to do so. If the University cannot teach out a programme of study, it will use its reasonable endeavours to facilitate the transfer of a student to an equivalent programme for which the student is qualified and which has places available within the University or at a different university.

2. Changes to services or facilities

The University will make available to students such learning support and other services and facilities as it considers appropriate, but may vary what it provides from time to time (for example, the University may consider it desirable to change the way it provides library or IT support).

3. Financial or other losses

The University will not be held liable for any direct or indirect financial or other losses or damage arising from such closures, discontinuations, changes to or mergers of any programme of study, service or facility.

Upon acceptance by an applicant of an offer of a place at the University, the relationship between the applicant and the University becomes contractual. When the contract is formed between the student and the University it will last for the relevant academic year only unless the student withdraws from the programme or the programme is terminated. Please note: the right of a student to withdraw from a programme of study under the provisions set out in paragraph 1(b) above following a Change, are in addition to any statutory rights of

cancellation that may exist under the Consumer Contracts (Information, Cancellation and Additional Charges) Regulations 2013. In entering into that contract, the terms of the contract will not be enforceable by any person not a party to that contract under the Contracts (Rights of Third Parties) Act 1999.

Force majeure

The University will not be held liable for any loss, damage or expense resulting from any delay, variation or failure in the provision of programmes of study, services or facilities arising from circumstances beyond the University's reasonable control, including (but not limited to) war or threat of war, riot, civil strife, terrorist activity, industrial dispute, natural or nuclear disaster, adverse weather conditions, interruption in power supplies or other services for any reason, fire, boycott and telecommunications failure.

In the event that such circumstances beyond the reasonable control of the University arise, it will use all reasonable endeavours to minimise disruption as far as it is practical to do so provided that such endeavours do not undermine the University's Quality Assurance requirements.

Admissions Policy and Complaints

The University will assess applications in line with its then current Admissions Policy. The Admissions Policy, current at the time of publication, is published online and is available at www.southampton.ac.uk
The Admissions Policy is reviewed at least annually.

Applicants may raise complaints related to admissions under the University's Regulations Governing Complaints from Applicants, which can be found in the Calendar at www.calendar.soton.ac.uk

Further information about, or clarification of, these procedures is available from Admissions Team, Student and Academic Administration, University of Southampton, Southampton SO17 1BJ, email: admissions@soton.ac.uk.

Data Protection

During the application procedure, the University will be provided with personal information relating to the applicant. An applicant's personal data will be held and processed by the University in accordance with the requirements of the Data Protection Act 1998.

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A copy of this brochure and the University's current information for students with disabilities and specific learning difficulties can be made available, on request, in alternative formats, such as electronic, large print, Braille or audio, and, in some cases, other languages.