

Imperial College London



Undergraduate Prospectus



2016 ENTRY

Number one
for graduate prospects

The Complete University Guide 2015

2nd best university
in the world

(joint) QS World University Rankings 2014

Located in London,
'Best city to live and work in'

The Boston Consulting Group (BCG) survey 2014

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LIFE AT IMPERIAL

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"I could tell a hundred stories about the little ways Imperial has come to surprise and impress me."

Will Smith came to meet the London 2012 Olympic stars training on campus.

Prince Harry opened our Blast Injury Studies Centre.



Find out more about College life from our **student bloggers**
www.imperial.ac.uk/studentblogs

Big names have dropped by to see what's happening at the College
www.imperial.ac.uk/news

Come and see Imperial for yourself at one of our **Open Days**
www.imperial.ac.uk/study/ug/visit

Welcome
to

IMPERIAL

Imperial College London is the only university in the UK to focus exclusively on science, medicine, engineering and business.

Joining this community means studying what you love with people who love it too.

Our specialist focus means you'll benefit from an education that crosses subject boundaries and brings new perspectives to your subject field. This is supported by opportunities to work with students and staff from across the College, both inside and outside your degree.

Our location in central London ensures we attract the best minds from all corners of the world and places us in the heart of a truly international community of employers. This paves the way for guest lectures from top industry experts, internships with major companies, industry-inspired project work and exciting careers.

And it starts right here.

Highlights

1907

Three great institutions were brought together by our founding Charter: the Royal College of Science, the City and Guilds College, and the Royal School of Mines.

14 Nobel laureates

are associated with the College including **Sir Alexander Fleming** who discovered penicillin, the first antibiotic, in 1928.



Graduation ceremonies are held in the magnificent neighbouring Royal Albert Hall.

No.1 for research impact

Imperial has the greatest concentration of high-impact research of any major UK university

Research Excellence Framework (REF 2014) – the process by which the UK higher education funding bodies assess the quality of university research

1ST IN LONDON AND 4TH IN THE UK

The Times and The Sunday Times Good University Guide 2015



FREE



gym and swimming facilities for all students

GENEROUS BURSARY SCHEME

supporting Home students with household incomes up to £60,000 – see page 58



24-HOUR OPENING

in our Central Library – see page 42



320+

student-led clubs, societies and projects – one of the largest ranges of any UK university – see page 54

GUARANTEED ACCOMMODATION

for all first year students in College-owned accommodation – see page 46

Voted best university for job prospects

WhatUni Student Choice Awards 2014



SEVEN CAREERS FAIRS

on campus every year as well as a rolling programme of company presentations and employer visits. See page 24.

TOP 10

in the world for our reputation with employers for producing the best graduates

QS World University Rankings 2014

LIVE, LEARN, BE INSPIRED AND ENTERTAINED ALL IN ONE PLACE...

Imperial is at the heart of 'Albertopolis', the realisation of Prince Albert's vision for an area where science and the arts would come together. More than 100 years of history have done nothing to diminish this legacy: today physics meets music in our joint course with the Royal College of Music (see page 129), engineering meets design in our centre for healthcare design and innovation with the Royal College of Art, and taxonomy meets biodiversity in our joint Master's course with the Natural History Museum.

EXPLORE THE FUTURE OF DESIGN...

at the annual graduate show for our two unique double Master's degrees in engineering design, run jointly with the Royal College of Art. Past projects include a pop-up micro factory and an eye-tracking camera.

 6 mins

ENJOY PERFORMANCES...

by some of the world's finest artists in the stunning Royal Albert Hall, where all Imperial students graduate. The Proms is one of the highlights in the calendar with standing places available for as little as £5.

 5 mins

FREE

SOAK UP THE SUNSHINE...

in Hyde Park and Kensington Gardens, two of the city's eight Royal Parks. The former regularly hosts major live music and sporting events while the latter is home to the Serpentine Gallery, displaying modern and contemporary art.

 7 mins

FEED YOUR SPIRIT OF ADVENTURE...

at events at the Royal Geographical Society.

 4 mins

LEARN GERMAN...

from scratch or build on existing skills in classes at the Goethe-Institut.

 3 mins

FREE

EXPLORE SCIENCE THROUGH THE AGES...


in the Science Museum, with the original model of DNA and the Apollo 10 command module among the displays.

 3 mins

FREE

ENJOY ART SPANNING 3,000 YEARS OF HISTORY...

in the world's largest museum of decorative arts and design, the Victoria and Albert Museum (V&A).

 4 mins

ENTER THE WORLD OF MUSIC...

through the Royal College of Music's event series.

 4 mins

TAKE A BALLET CLASS...

at the English National Ballet, which caters for all levels, and offers concessions for students.


 5 mins

QUEEN'S TOWER
The heart of our South Kensington Campus


FREE

SEE NATURAL HISTORY COME TO LIFE...

in the award-winning Natural History Museum, home to around 70 million specimens, including some collected by Darwin.

 4 mins

↓ Discover Imperial and this beautiful area of South Kensington through 360° photos, video tours and slideshows: www.imperial.ac.uk/interactivemap

 Walking time (minutes) from the Queen's Tower

An Imperial education

Our degrees are designed to stretch you academically, helping you to discover what you love most about your subject and preparing you for more advanced study.



Medicine students have direct contact with patients from their very first term to gain valuable clinical experience that is built on throughout the course.



Our wind-wave-current flume is capable of reproducing shallow- and intermediate-depth waves.

LEARN AT THE CUTTING EDGE

One of the standout features of an Imperial education is the quality of our research-led curriculum. Our academics are active researchers who draw on their own research experience to bring the subject to life. You'll have lots of opportunities to engage with their work through lectures, seminars and projects. You'll also have the chance to develop your own research skills through hands-on experience both inside and outside the classroom, supporting your development as a critical thinker capable of applying your own ideas.

WORK ACROSS DISCIPLINES

You will benefit from the cross-disciplinary links that are a key feature of College life, with opportunities on many courses to study topics from different departments or work on joint projects that cross subject boundaries.

For example, more than 100 students from across our Faculty of Engineering are part of Imperial Racing Green, an initiative to design, build and test zero-emission racing cars. Such projects provide a melting pot of ideas and experiences that encourage our students to learn from each other.



From Prudhoe Bay on the north Alaskan coast, all the way to the world's southern-most city, Ushuaia in Argentina, our Racing Green Endurance team became the first to drive the full 26,000km of the Pan-American Highway in an electric car.

bit.ly/imperial-racing-green

GAIN A PROFESSIONALLY ACCREDITED QUALIFICATION

Over 60% of our degrees are professionally accredited, combining both academic and professional study. This ensures you graduate with an industry-recognised standard of competency that accelerates your journey towards professional registration in your chosen field, such as Chartered Chemist or Chartered Engineer. As well as higher earnings potential and better career prospects, professional registration brings international recognition of your qualification for those preparing for careers further afield.



KEY FACTS

Teaching normally takes place on weekdays, between 9.00 and 17.50

Wednesday afternoons are kept free for recreational activities such as sport

LEARNING METHODS

- ▶ lectures (large group teaching)
- ▶ tutorials (small group teaching) to build on lecture material
- ▶ peer tutorials where students from higher years tutor first years
- ▶ laboratory classes, practicals and fieldwork
- ▶ problem solving classes
- ▶ industry placements
- ▶ project work
- ▶ e-learning

TYPES OF ASSESSMENT

- ▶ traditional closed book exams with essay-type questions
- ▶ open book or take away exams
- ▶ exams with short answer questions
- ▶ computer-based exams
- ▶ coursework and/or laboratory work
- ▶ group and individual projects

FIND OUT MORE:

www.imperial.ac.uk/success-guide

BROADEN YOUR HORIZONS

Horizons is a pioneering programme of courses in areas including business, global challenges, languages and global citizenship, and science, culture and society. Weekly interactive debates, seminars and group work allow you to add breadth to your education experience.

All courses are available on a non-credit basis to help you gain critical skills such as communication, team working, problem solving and business and organisational awareness. The programme also helps to demonstrate to employers your achievement outside of your subject area. Some departments have integrated Horizons into their curriculum as optional for-credit modules.

LEARN A LANGUAGE

Science and engineering projects are increasingly global, requiring collaboration across cultures. To build your awareness of different cultural perspectives, language study is an integral part of Horizons. The Departments of Chemistry and Life Sciences also offer combined degrees in Science with a Language for Science for students who wish to pursue language study to an advanced standard alongside their scientific studies. See pages 76 and 102 for details.

GAIN MANAGEMENT EXPERIENCE

If you're considering a career in business or management, you can take advantage of opportunities within and outside your degree through Imperial College Business School, including Joint Honours degrees for Chemistry and Life Sciences students. Engineering and science students may be able to build business topics into their degree through our Business for Professional Engineers and Scientists (BPES) programme, which offers a range of for-credit business and management modules.

www.imperial.ac.uk/horizons

The Carbon Capture Pilot Plant gives undergraduates the chance to learn first-hand about technology which could be used in the future to reduce the UK's greenhouse emissions.

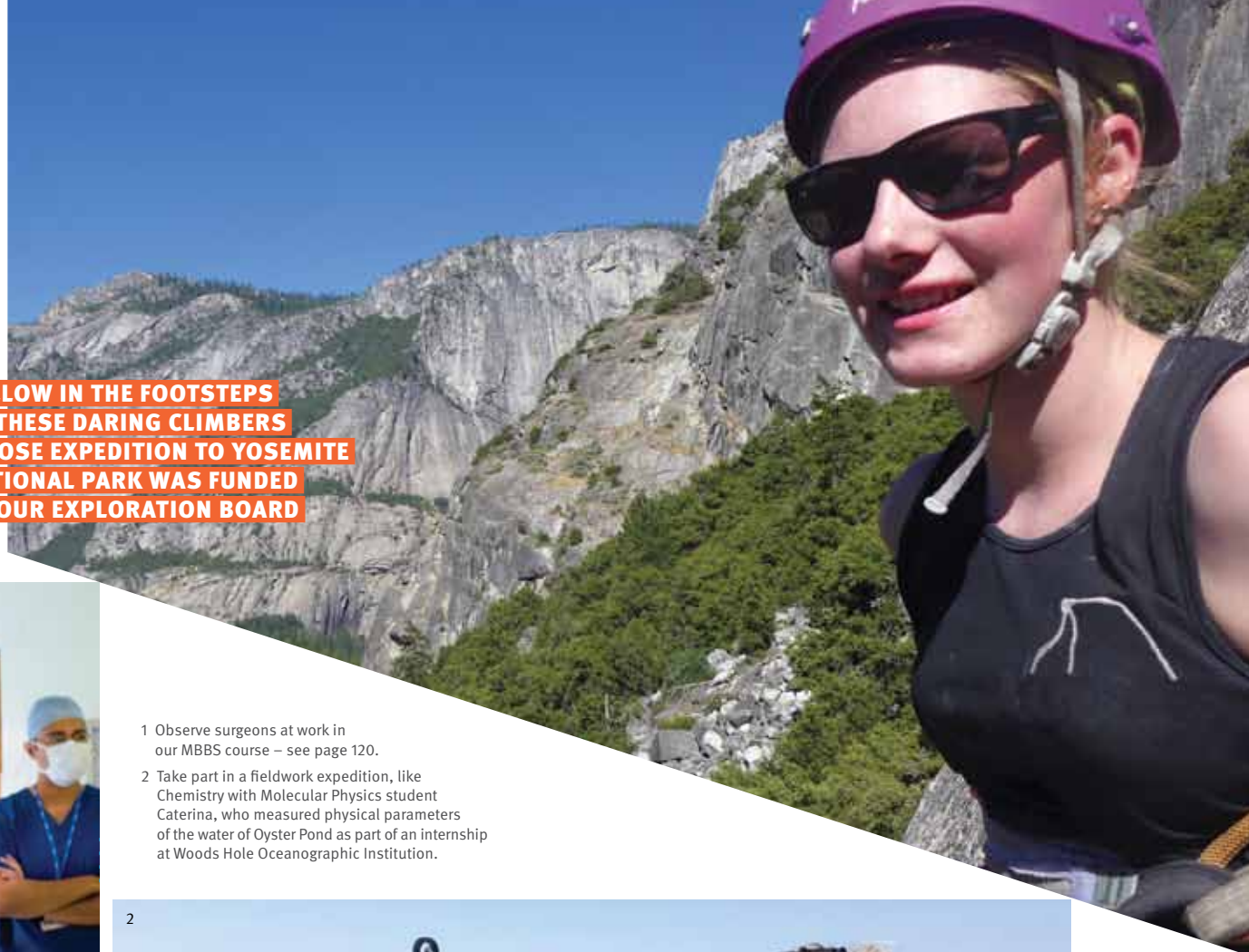


NOT ALL LEARNING TAKES PLACE IN THE CLASSROOM

Inspiring field trips, in-course placements, summer internships and adventurous expeditions will not only add depth to your Imperial experience, they're a chance to gain new skills and apply what you have learnt in the real world.



FOLLOW IN THE FOOTSTEPS OF THESE DARING CLIMBERS WHOSE EXPEDITION TO YOSEMITE NATIONAL PARK WAS FUNDED BY OUR EXPLORATION BOARD



- 5 Use your skills to benefit rural developing communities, like these volunteers in our social enterprise project, e.quinox – see page 101.
- 6 Undertake a Year Abroad like Mathematics student Sophie who spent a year studying in Lausanne in Switzerland – most departments offer Year Abroad degrees.



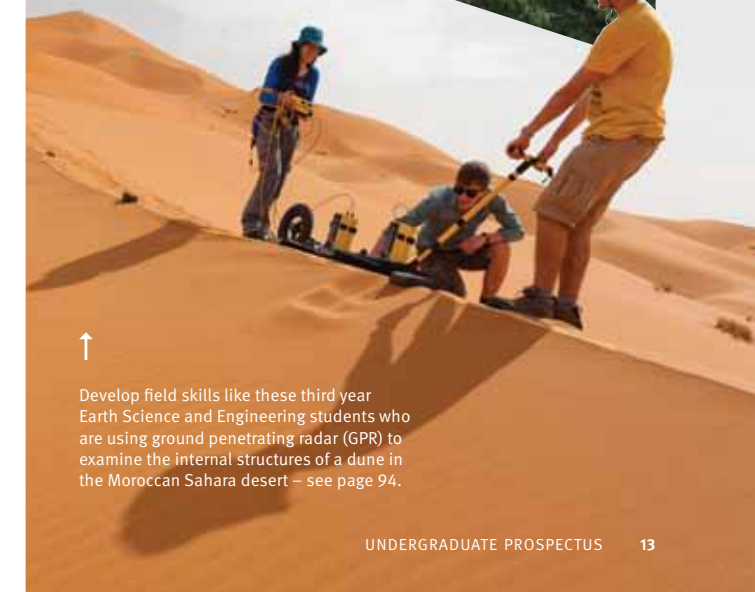
- 1 Observe surgeons at work in our MBBS course – see page 120.
- 2 Take part in a fieldwork expedition, like Chemistry with Molecular Physics student Caterina, who measured physical parameters of the water of Oyster Pond as part of an internship at Woods Hole Oceanographic Institution.



3 Put your skills into action in the real world, like Aeronautics student Gareth, who interned in the aerodynamics department for Mercedes AMG Petronas F1.



4 Get hands-on construction experience at the annual Constructionarium for Civil Engineering students – see page 80.



Develop field skills like these third year Earth Science and Engineering students who are using ground penetrating radar (GPR) to examine the internal structures of a dune in the Moroccan Sahara desert – see page 94.

Academic support

Academic life at Imperial is deliberately challenging, pushing you to expand your horizons and use your talents in new ways.

The transition to degree-level study can be a challenge. That's why we make sure that every student has a network of support in place so you know that there's help on hand if you need it.

Every undergraduate is assigned a personal tutor for guidance on personal and academic issues. This is usually an academic member of staff from your department. Every department also has a Senior Tutor who can offer further support and guidance.

The tutor system within our departments is complemented by a College-wide network of male and female College Tutors who can provide impartial advice to all students.

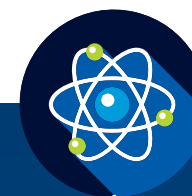
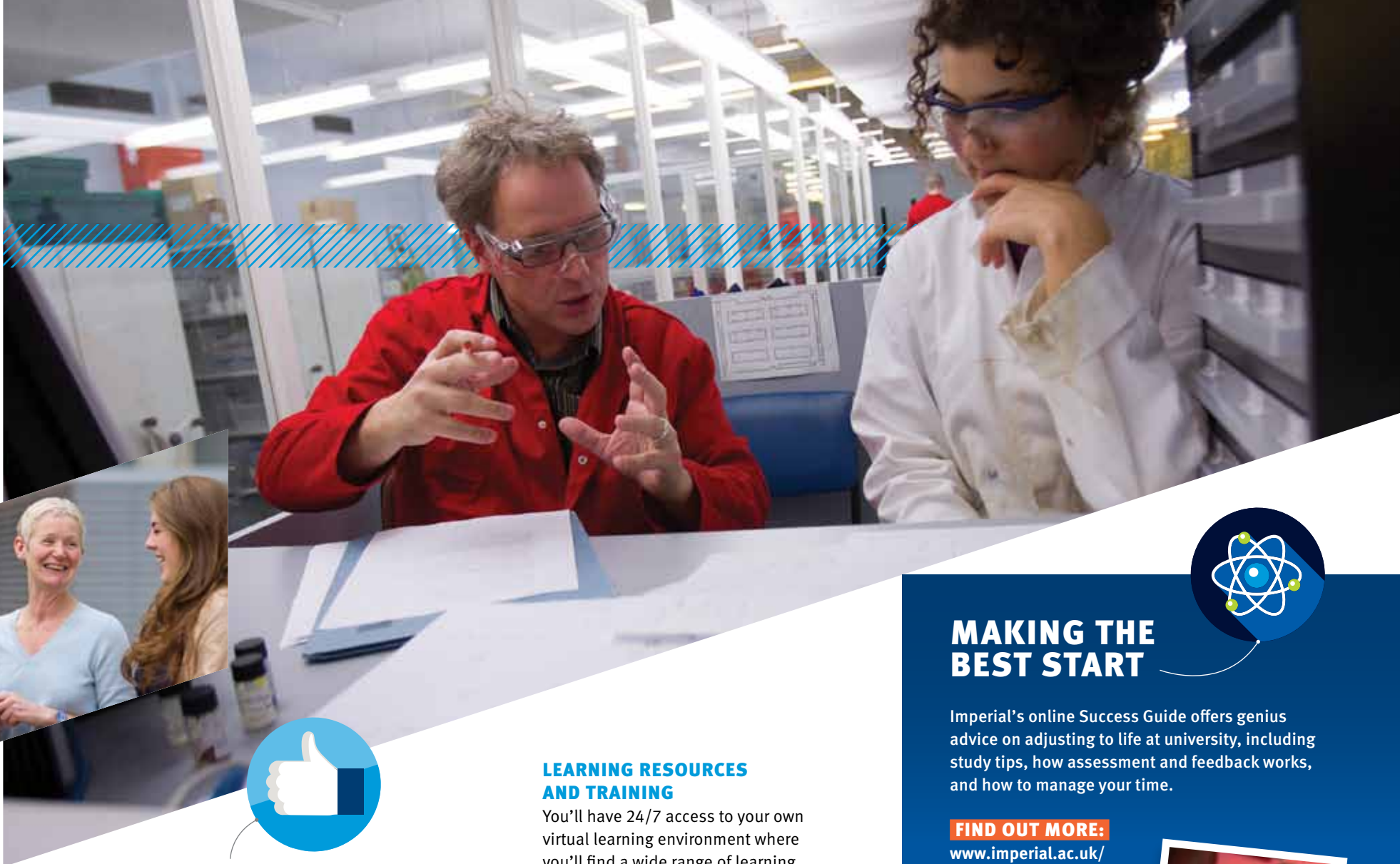
Students with a disability, specific learning difficulty, or enduring health or mental health issue can access free confidential advice and support from the Disability Advisory Service. Advice is available on a range of topics, from applying for a Disabled Students' Allowance, to accessing assistive learning technology. See page 44.



We have over 400 course reps whose job is to communicate your views about your course back to your department, so if there's something we can do to improve your learning experience it's easy to let us know.

RESEARCH PROJECT SUPERVISION

One of the most memorable and rewarding aspects of the study experience for our students is usually the independent research project. This is a substantial piece of work, normally undertaken in your final year under the guidance of an academic supervisor. Your supervisor's research specialisation will usually match your topic of interest; their mentoring will challenge your ideas and encourage you to think critically about your work.



MAKING THE BEST START

Imperial's online Success Guide offers genius advice on adjusting to life at university, including study tips, how assessment and feedback works, and how to manage your time.

FIND OUT MORE:
www.imperial.ac.uk/success-guide



New students can tap into the expertise of returning students through the Students' Union's Mums and Dads scheme, which creates Imperial 'families' by matching first years with students from other years in their department.

LEARNING RESOURCES AND TRAINING

You'll have 24/7 access to your own virtual learning environment where you'll find a wide range of learning resources such as lecture notes, reading lists and practice tests. You'll also find College-wide tools such as METRIC, an online bank of mathematical resources, which was developed at Imperial to support students making the transition from A-level to university level maths.

In addition, you can take advantage of group and one-to-one training sessions in the Library to develop your academic reading, writing and note-taking skills. We have subject librarians for every department who can offer expert advice on finding resources for your subject area.

For international undergraduate and exchange students there are free in-session courses, workshops, consultations, and self-study resources to develop academic language skills and literacy, as well as classes focused on social English – see page 62.

INSPIRE

the next generation

12,000+

visitors got the chance to meet our world leading researchers and see the work of our staff and students up close at the annual Imperial Festival in 2014.

bit.ly/imperial-festival-2014

Imperial staff and students regularly come together to share their latest experiments with the public. The annual Imperial Festival celebrates our most exciting discoveries through interactive demonstrations, thought provoking talks, live music and more, while our monthly Fringe events explore the unexpected side of science.

Our research

Imperial represents everything that's most exciting about science, engineering, medicine and business. It's a place where engineers work alongside clinicians, scientists rub shoulders with designers, and mathematicians collaborate with business experts.

It's no surprise then that Imperial has been home to so many pioneers over the years, from Alexander Fleming, discoverer of penicillin, to Dennis Gabor, inventor of holography. The innovations that continue to make the world a healthier, cleaner and safer place are made possible by our commitment to collaborative discovery, which extends from our undergraduate education to the world leading work of our research groups.

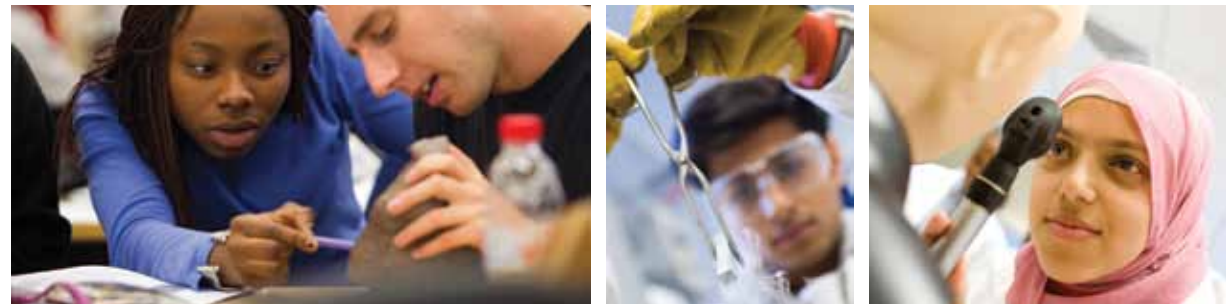
This culture of working across subject boundaries plays a big part in your Imperial experience, adding new depth to your choice of study topics and inspiring new directions in which to take your interests. The majority of our degrees involve at least one substantial research project, so you'll have the chance to gain research skills and forge new paths in an area of particular interest to you, under the supervision of an expert mentor.

Many of our researchers are involved in teaching so you'll benefit from their expertise first hand. You can also work alongside them in our Undergraduate Research Opportunities Programme (UROP), which offers over 400 students a year the chance to gain hands-on experience in one of our research teams – see pages 22–23.

230 FELLOWSHIPS

have been awarded to members of our staff from three prestigious societies:

- ▶ the Royal Society
- ▶ the Royal Academy of Engineering
- ▶ the Academy of Medical Sciences



PROBLEM SOLVING AT ITS MOST AWE-INSPIRING

Imperial is a place where exciting things happen every day. That's not surprising considering who works here – people who...

... have made essential contributions to the quality and safety of surgery, like **Professor Lord Ara Darzi**, former Parliamentary Under-Secretary of State at the Department of Health and UK Global Ambassador for Health and Life Sciences.

... have created life-changing innovations, like **Regius Professor Chris Toumazou**, developer of one of the world's first cochlear implants, enabling deaf people to hear.

... break new ground in their field, like **Professor Molly Stevens**, who received the 2012 EU40 award for best materials scientist in Europe under the age of 40.

... change our understanding of the universe, like **Emeritus Professor Sir Tom Kibble**, one of six physicists whose work in the 1960s led to the concept of the Higgs boson.

... amaze the public with their discoveries, like **Professor Sir John Pendry**, whose work on metamaterials underpinned the development of the first invisibility cloak.



... are tackling infectious diseases, like **Professor Christl Donnelly**. She and her colleagues work with the World Health Organisation to model the spread of diseases like Ebola.

... are leading missions into space, like **Professor Michele Dougherty**, a Principal Investigator on the Cassini spacecraft, orbiting Saturn, and on the JUICE spacecraft, due to reach Jupiter's largest moon in around 2030.

... are working to preserve history, like materials scientist **Professor Mary Ryan**, who is working with the Royal Air Force Museum to save from corrosion the last remaining intact World War II German light bomber, known as The Flying Pencil.

... have become household names like **Lord Robert Winston**, Professor of Science and Society and Emeritus Professor of Fertility Studies, known for his many TV documentaries like *Child of Our Time*.

PROBLEM SOLVING ON A GLOBAL SCALE

Our research comes alive when it reaches the people who need it and want it the most. We're best described as a community of problem solvers who are dedicated to finding solutions to some of the world's biggest challenges.



↑ **Preventing up to three million deaths from malaria each year** is the goal of work by researchers in the Department of Life Sciences who are breeding mosquitoes and analysing their interactions with the malaria parasite *Plasmodium*, in the hope of finding new ways to tackle the disease.

The BBOXX system links solar panels to a battery pack into which people can plug lights, phone chargers and televisions or power a space up to the size of a small office, depending on the size of the device.



GLOBAL GAME-CHANGERS



↑ The global fight to end the HIV/AIDS epidemic is at the heart of Imperial's work in the CHERUB collaboration, an alliance of HIV researchers at five UK universities, which has begun a ground-breaking trial to test a possible cure for HIV infection.



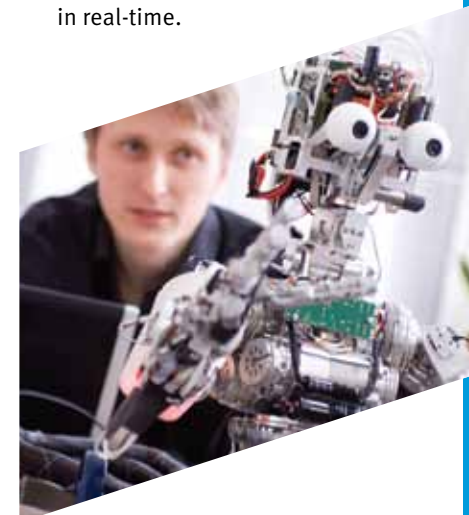
1.4 billion people living without access to reliable electricity is a problem three of our Electrical and Electronic Engineering graduates have set out to address with their business, BBOXX. It sells solar-powered battery boxes to people in developing countries – an idea that grew out of the charity e.quinox, which the team founded during their second year at Imperial and which is still going strong today. See page 101.



Improving the efficiency of solar panels is the goal of scientists in our Department of Physics, who found that covering their surface with aluminium studs, like the surface of a Lego brick, will bend and trap light inside the absorbing layer, and improve efficiency by up to 22%.



↓ **Developing robots that can work in the real world** is the inspiration behind the £5 million Dyson Robotics Laboratory at Imperial. This collaboration with the manufacturer sees researchers working to develop robots with improved computer processing power, allowing them to process visual information in real-time.



LIFE-SAVING GADGETS

↓ **iSnake**
A robotic surgical device that can move independently through the body to its target, where the surgeon can operate it by remote control

Professor Guang-Zhong Yang and Professor Lord Ara Darzi, Institute of Global Health Innovation

↓ **iKnife**
An 'intelligent knife' that can tell surgeons immediately whether the tissue they are cutting is cancerous or not

Dr Zoltan Takats, Department of Surgery and Cancer



AWARD-WINNING INNOVATION

The ingenuity of Imperial students earned them gold medals at the International Genetically Engineered Machine (iGEM) competition, coming first in the manufacturing section and second overall out of a total of 220 teams worldwide.

↑ A team of Life Sciences students has joined up with students from the Department of Bioengineering to create a cheaper, more environmentally friendly kind of water filter. Part of their work involved re-engineering the genetic code of a bacteria found in kombucha herbal tea.



UNDERGRADUATE RESEARCH OPPORTUNITIES PROGRAMME

The Undergraduate Research Opportunities Programme (UROP) provides an exciting taste of a career in research. It's a unique opportunity to see first-hand how our research groups operate, as well as giving you the chance to explore ideas for your final year research project. Some UROP students even get their name on a scientific paper – an impressive addition to any CV!

A typical UROP placement lasts 6–10 weeks during the second or penultimate summer vacation but can also be at other times, including during term-time.

6,000+

students have taken part in UROP since it began in 1980

400+

undergraduates take part in UROP every year

£170–£220

Typical weekly value of a tax-free UROP bursary which your supervisor may provide to cover your living costs. Various bursary schemes also exist.

www.imperial.ac.uk/urop

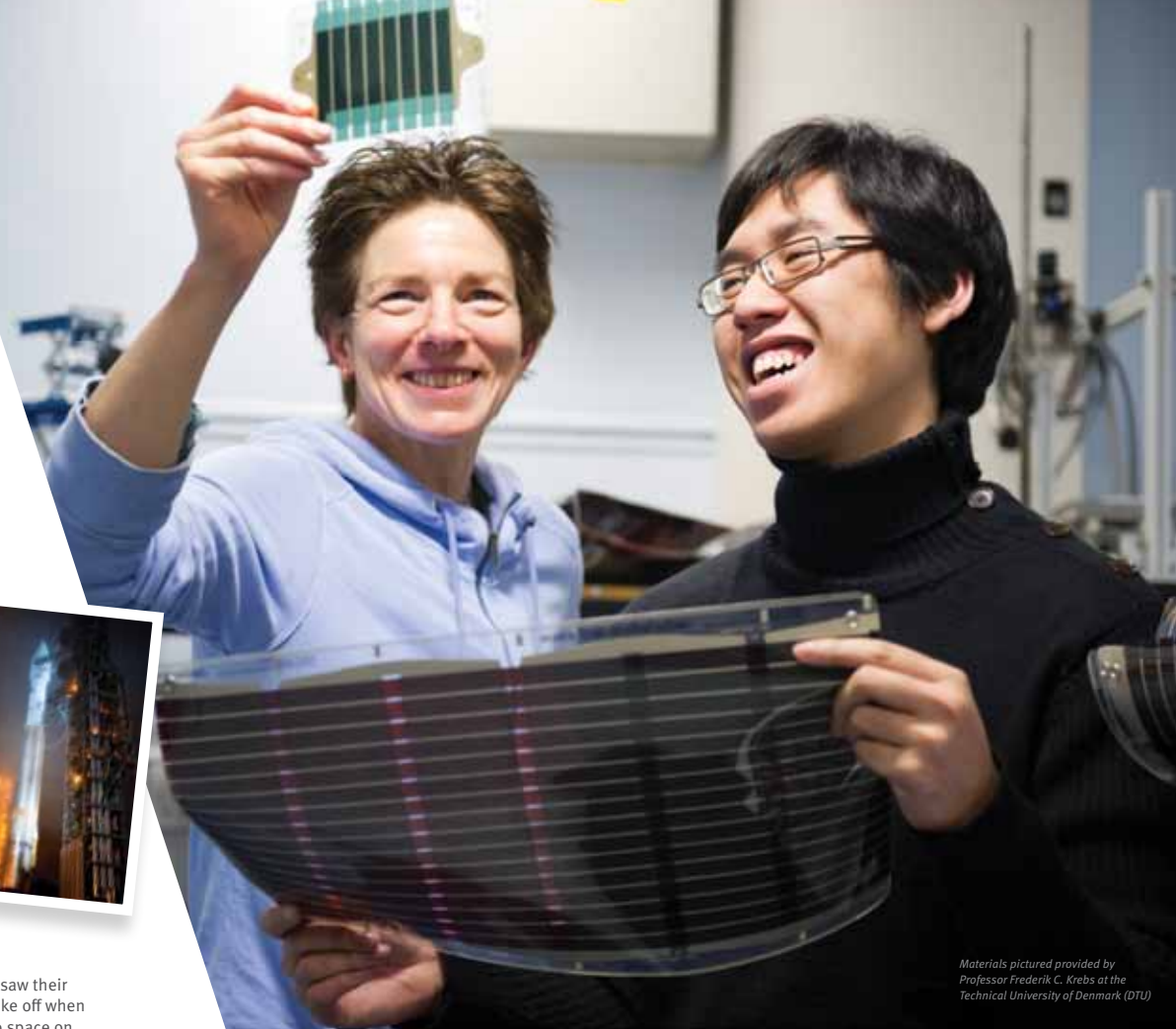


CINEMA 1 CubeSat launch in California in 2012

Recent UROP students saw their experiments literally take off when they hitched a ride into space on small cube-satellites or 'CubeSats' (measuring 10 × 10 × 30cm). There have been three Imperial missions to date to study space weather in the near-Earth environment, using a magnetometer sensor (MAGIC) built by the College's Space Magnetometer Laboratory. Current students are helping to develop a new instrument, which will fly on a NASA solar sail spacecraft called Sunjammer in 2015.



Imperial's research expertise spans an enormous breadth of topics so it's no surprise that past UROP placements have been equally varied, including teaching dance routines to a humanoid robot called Nao, studying plant-fungal symbiosis with academics based at Kew Gardens, and understanding structures of the striated muscle sarcomere at the National Heart and Lung Institute.



Materials pictured provided by Professor Frederik C. Krebs at the Technical University of Denmark (DTU)



THREE GREAT REASONS TO GET INVOLVED IN UROP

- 1 **Get first-hand experience** of what it's like to work as a university researcher
- 2 **Take existing interests to new depths** by engaging with the very latest advances – often beyond what is covered in your course
- 3 **Develop ideas and new skills** that you can draw on for your assessed research project, as well as for future study



PROJECT: Modelling of polarisation and charge transport in organic photovoltaic materials

“This project not only allowed me to learn about organic photovoltaics in a much greater depth than I would in my course, but also gave me the chance to learn the programming language Python. I had a lot of interaction with the researchers across the group, including attending their weekly journal club meetings where members would present their latest findings, and I felt like my project was really valued as part of their overall work.”

Cleaven, BSc Physics with Theoretical Physics, pictured with his UROP supervisor Professor Jenny Nelson, who leads a research team investigating new materials and devices for photovoltaic solar energy conversion.



PROJECT: Investigating parameters affecting calcite deposition in glass capillaries

“Coming from Bangladesh, which suffers heavily from the adverse effects of global warming, I am really interested in work to find ‘green’ solutions. I took part in the Horizons programme to better understand the challenges involved in tackling this global problem. And when the placement at the Qatar Carbonates and Carbon Storage Research Centre (QCCSRC) came up, I thought this was an opportunity not to be missed. One of the most rewarding aspects of my placement was exposure to investigative experimentation – choosing parameters and testing them systematically, without knowing the result beforehand.”

Nabil, MEng Chemical Engineering

Planning your future

Imperial currently holds the best record for graduate employment in the UK – and we're committed to maintaining this success.



Our Charity Insights bursary scheme offers funding for a four-week internship in a charity of your choice. Read more in our blog: www.imperial.ac.uk/careers/charityinsights



Our Careers Service is on hand to support your career planning from your very first day and for up to three years after graduation.

One-to-one sessions with trained careers consultants, daily skills seminars tailored to meet the different stages of the recruitment cycle, a range of employer events and a free CV checking service are just some of the ways we support your career planning. Each department also has a member of staff who is responsible for providing subject-specific careers advice and guidance.

EMPLOYER-LED SUPPORT

Employers play an active part in many of our degrees, including hosting placement students, guest lecturing and providing real industry scenarios for project work.

Employers are also heavily involved in our career development programme, delivering careers lectures and weekly skills workshops to give you an insight into different careers and help with interview technique, business awareness, psychometric testing, making applications and time management.



- 1 Talk to employers about their internship opportunities at our annual internship fair. You can also book a consultation with our Placement and Internship Unit to help you find one that's right for you.
- 2 The Careers Information Room is an excellent starting point for researching career options, with help available from our information team. The Careers Service website also holds lots of useful resources, including psychometric practice tests, recorded talks and tips covering every aspect of the recruitment process:

www.imperial.ac.uk/careers

TURN GREAT IDEAS INTO REALITY

Imperial is one of the UK's most successful sources of university spin-out businesses. Budding innovators and entrepreneurs can find all the help they need at the Imperial Create Lab which combines idea generation, mentoring, education, co-working, hacking and fun to help you get your ideas into the real world. The Lab also hosts the Venture Catalyst Challenge which helps new entrepreneurs build teams, identify the best business model, find early customers and attract funding, to take their ideas beyond the planning stage.

FOLLOW IN THEIR FOOTSTEPS

Space scientist **Maggie Aderin-Pocock** has joined the BBC's longest running astronomy series, *The Sky at Night*, as one of its new presenters.

Physics 1990, PhD Mechanical Engineering 1993



Alice Rowlands is one of many Imperial graduates to work in Formula 1, as a Vehicle Dynamics Engineer at McLaren Racing.

MEng Mechanical Engineering 2011



Several engineering graduates from Imperial came together with former Google employee and 'angel' investor Gerald Aigner to form MeshPower in 2012. The social enterprise produces a self-managed micro-grid tailored for rural communities around the world.

Pictured left to right: Richard Mori, MEng Mechanical Engineering 2013; Ali Al-Hakim and Lukas Lukoschek, MEng Electrical and Electronic Engineering 2013



No.1

in the UK for graduate prospects

The Complete University Guide 2015

7,000+ EMPLOYERS

advertise their opportunities every year through our online vacancy service, JobsLive

£2+ MILLION

raised by entrants in the Create Lab's Venture Catalyst Challenge

7

annual careers fairs, including engineering, science, and finance and consulting fairs, bringing hundreds of employers to campus

YOUR FUTURE IN YOUR HANDS

A degree from Imperial puts you at the best possible advantage with future employers, but you still need to be able to show your potential. We offer lots of ways for you to demonstrate your skills in action to help you stand out in the competitive job market. Employers look for...



...GLOBAL, CULTURAL AND BUSINESS AWARENESS



↑ Our **Horizons** programme is designed to broaden your education beyond your subject field, with weekly courses in various areas of study. There are also opportunities to learn a language, which will make you particularly attractive to multinational employers. See page 10.



MEng Aeronautical Engineering student Sergiu took part in a space studies internship organised in collaboration with the Russian Space Agency at Samara Space Studies University in Russia.

↑ Check out what joint degrees and for-credit modules are available in **Imperial College Business School** (page 10) to gain an understanding of the operating environment of businesses.

Find out what options are available for **work or study abroad** in your subject on pages 64–129.

Communication is one of the key skills developed on our President's Ambassadors scheme, which covers a wide range of high-profile activities, from welcoming international visitors to the College to giving guided campus tours.



...REAL WORLD EXPERIENCE

↑ Evidence of industry experience can help your CV stand out, and employers are increasingly using their internship schemes as a recruitment tool for their graduate programmes. The Career Service's Placement and Internship Unit is dedicated to finding placements for our students, both in the UK and abroad. See page 24.

Gain first-hand experience of working in one of our research teams through our **Undergraduate Research Opportunities Programme** (UROP). See pages 22–23.

...EXCELLENT COMMUNICATION SKILLS

↓ Our student-run radio, newspaper, and TV societies are excellent showcases for your spoken and written communication skills – the experience you gain may also be a springboard into a career in journalism.



...INDEPENDENCE, INITIATIVE, AND PERSONALITY

↑ Spend some time volunteering, with opportunities in the UK and abroad, from building earthquake-proof buildings in El Salvador to digging a wildlife garden at the Natural History Museum – right next door to our South Kensington Campus.



Consider becoming a tutor or mentor. Imperial Hub's weekly Code Club teaching children how to code is just one of the ways you can show off your communication and leadership skills. You can also provide support online through our science and engineering e-mentoring programme.



Why not take on a leadership role such as running a student society, becoming a departmental representative, or joining the committee that has a say in how your halls of residence are run?



Learn a new skill. Our Blyth Music Centre can help arrange music and singing lessons and free access to practice rooms. And don't forget about the Union's huge choice of clubs, societies and projects for trying new experiences – see pages 54–55. Please note, a charge applies for music lessons.



↑ Plan your own expedition. Our Exploration Board funds trips that strike a balance between scientific research and adventure-inspired exploration. For employers the trip provides evidence of initiative, planning, teamwork and adaptability – all highly sought-after skills in the workplace.

Find out more at:
www.imperial.ac.uk/study/ug/why-imperial/career-success



CELEBRATE

joining a global
alumni network

Your relationship with the College does not end when you graduate. As an Imperial alumnus, you will join a community of 170,000 former students in 192 countries.

It's a community that includes prestigious prize winners, inventors, business leaders, scientists, engineers, doctors, journalists, researchers and entrepreneurs – united in their shared experience of studying in London at one of the best universities in the world. Imperial alumni enjoy a range of exclusive perks including invitations to events, careers support, and access to an alumni lounge and meeting space on our South Kensington Campus.

www.imperial.ac.uk/alumni

↑
The magnificent setting of the Royal Albert Hall, one of the world's finest concert halls, perfectly matches the pride and sense of achievement our graduates feel as they mark the end of their time at Imperial.

Location, location, location

Career success is often about being in the right place at the right time. Imperial's central London location puts you at the heart of one of the world's most exciting cities. This makes it easy for you to engage with employers and develop a valuable network of professional contacts who could get your career off to a flying start.



Imperial has excellent relationships with some of London's biggest employers, allowing us to provide a full programme of guest lectures, company presentations and alumni/student networking events.

75%

of **Fortune 500** companies have London offices

42% OF ALL GRADUATE VACANCIES IN THE UK ARE BASED IN LONDON

Association of Graduate Recruiters
Graduate Recruitment Survey 2013 Winter Review

1st

London claimed **the top spot** as a centre for business, finance and culture

PwC's Cities of Opportunity Index 2014

PLACEMENTS AND INTERNSHIPS

The strength and number of the College's links with industry, plus the concentration of businesses in London, mean plenty of opportunities to gain industrial experience inside and outside the curriculum. Many of our degrees include a built-in placement. The Careers Service advertises hundreds of vacancies each year through its JobsLive service, and our Placement and Internship Unit is on hand to help you find the best opportunities. Your Department may also receive details of placements directly.

GLOBAL JOB MARKET

Over 100 of Europe's 500 largest companies are headquartered in central London, setting you at the heart of a global job market. This is reflected in the list of employers who come to campus specifically to recruit our students, and who are popular employers of our graduates, recently including: Barclays, BASF, Bloomberg, GSK, Google, Jaguar Land Rover, KPMG, L'Oréal, Rolls-Royce and Shell.

Tap into the experience of hundreds of former students through our 'Ask an alumnus' service for tips on entering a particular industry. Also look out for careers 'speed-dating' sessions for the chance to gain advice face to face.



BUILDING CONTACTS

As a student in London, you'll have a head start over graduates from other cities as you start to build a network of useful business contacts. Many professional societies have their headquarters in London, including the British Medical Association, the Royal Society, and the Royal Academy of Engineering. It's worth keeping an eye out for public events run by these organisations, such as lectures, which are an opportunity to meet prospective employers. You will also be ideally placed to attend interviews, undertake internships, visit companies and watch company presentations.



↑ The Department of Chemical Engineering's Carbon Capture Pilot Plant is sponsored by ABB, one of many industrial partners who have provided support that allows our students to gain real world experience.



Gira, a 4th year Electrical and Electronic Engineering with Management student, was offered a graduate role at Deutsche Bank following his six-month placement.

LONDON

the best
student city
in the UK

according to QS Best Student Cities 2015, which ranks London third best student city in the world.

If you want a student experience unlike any other, London's fusion of culture, charm and career opportunities is hard to beat... discover some of the best museums and galleries in the world for free, try food from across the globe, visit a different pub or bar every time you go out – and take advantage of 24/7 bus and weekend Tube travel home, watch free gigs from soon-to-be-famous bands, and don't be surprised if you have a chance encounter with a celebrity or two. But don't let the excitement of London stop you venturing further afield – the Eurostar from central London will get you to Paris in just over two hours.



Imagine the memories you could create with such spectacular scenery forming the backdrop to your student experience, like the iconic London Eye, Palace of Westminster and Westminster Bridge (pictured here).

Living in London

With discounts on everything from clothes to travel, and the generous Imperial Bursary scheme for Home students, being a student at the College is one of the most cost effective times in your life to experience London living.

There's a reason why people come from all over the world to visit London – and the city thrives on the diversity that this brings. The streets are abuzz with the sounds of more than 300 languages, and the huge choice of international restaurants and shops means that no matter where you're from, it's easy to find the comforts of home.

Money can be a concern, and like any big city, life in the capital can be expensive. But with sensible budgeting it is possible to enjoy much of what London has to offer. And don't forget that many of the city's best attractions are cheap or free, from last-minute theatre tickets to free-entry museums.

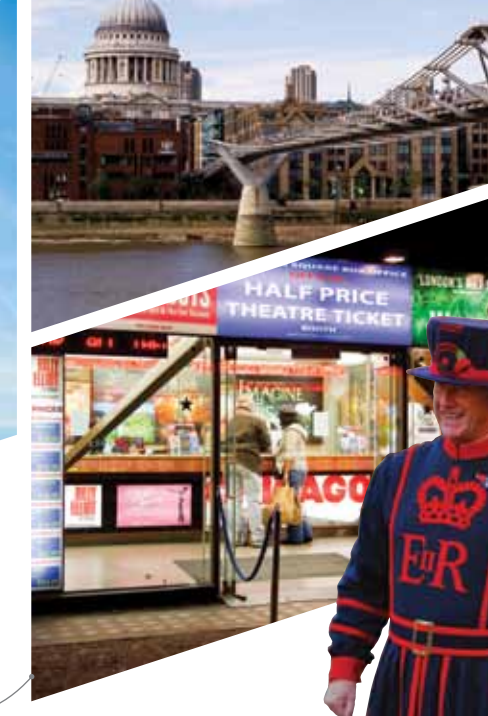
In fact, you might be surprised how quickly London will start to feel like home, not least because its iconic scenery is regularly featured on the big screen. At about the same time as you start to get used to seeing these sights in real life, you'll start to realise that the city is more like a series of villages, each with its own vibe and character, and once you know your way round you'll find it easy to escape the crowds and enjoy being part of 'village' life.

MANY OF LONDON'S TOP ATTRACTIONS HAVE FREE ENTRY

→ London's 857 art galleries and over 170 museums include some of the world's best.



↑ There are many ways to get around the capital.



200 theatre shows run daily in the West End, including smash hits like *The Lion King*, *Wicked* and *Matilda*. There are also close to 800 cinema screens, accounting for over a fifth of the UK's total.

17,000

music performances a year across London's 300+ venues

250

festivals per year, including Europe's biggest street festival, the Notting Hill Carnival



- 1 British Museum
- 2 Piccadilly Circus
- 3 Tower Bridge and the River Thames
- 4 Big Ben and the Houses of Parliament
- 5 St Paul's Cathedral and the Millennium Bridge

The 'Beefeaters' are one of many icons of British history and tradition that you'll find all over the city.

Source of statistics: www.london.gov.uk

OUR NEIGHBOURHOOD

Our campus is surrounded by some of London's most famous cultural treasures. Just a five minute walk will take you to the door of three of the world's finest museums: the Science Museum, the Natural History Museum and the V&A Museum, while the green spaces of Hyde Park and Kensington Gardens are just a stone's throw away.

South Kensington is renowned as a vibrant and attractive neighbourhood, with plenty of restaurants, bars and shops, as well as green space.

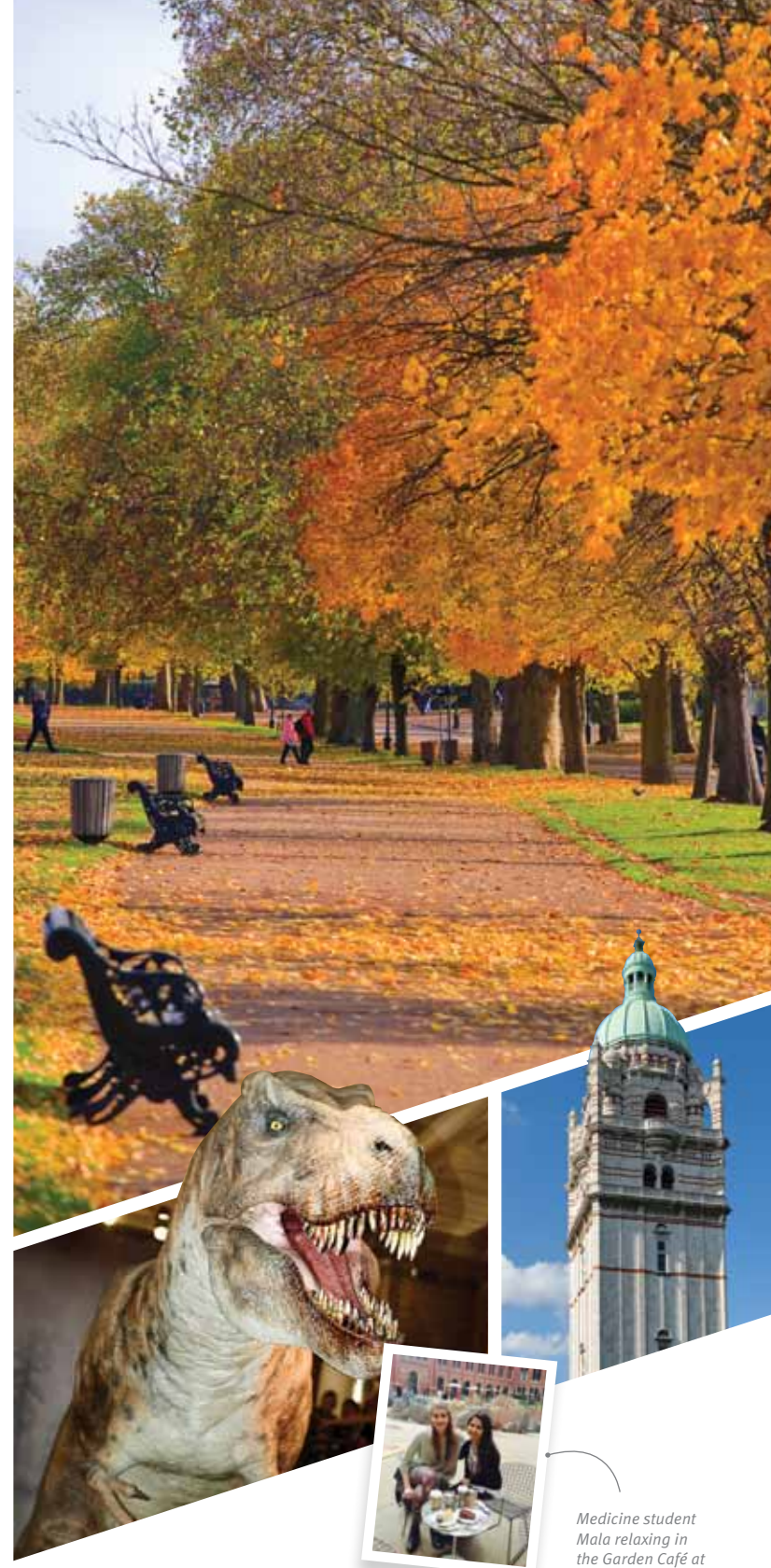
It is also a safe and welcoming area to make your home, with *The Complete University Guide* recently rating Imperial one of the safest universities in Zone 1.

↓ Boating on the Serpentine lake in Hyde Park is a popular summer activity.

LONDON IS EUROPE'S GREENEST MAJOR CITY



A Farmers' Market takes over the Queen's Lawn at the College every week, selling the freshest fare.



87m

the height of the Queen's Tower. Located at the centre of our campus, the Tower is a landmark in South Kensington.

20m

annual visitors make South Kensington Britain's most popular tourist destination

3

Tube lines serve our neighbourhood: Circle, District and Piccadilly

£5

on-the-day tickets available throughout the world-famous BBC Proms season at the Royal Albert Hall

5,000

acres in London's eight Royal Parks, including Hyde Park and Kensington Gardens on our doorstep

↑ The Natural History Museum, less than 10 minutes' walk from Imperial, is one of three world class museums on Exhibition Road.

Medicine student Mala relaxing in the Garden Café at the world's largest museum of decorative art and design, the V&A Museum

Campus life

If you want to study in London then our South Kensington Campus is central enough to be within easy reach of everything the city has to offer without sacrificing access to the great outdoors that comes with having Hyde Park and Kensington Gardens on your doorstep.

Our main campus is in South Kensington in west London and is the site where the original College was founded in 1907. It has witnessed much expansion over the years – noticeable in the huge range of architectural styles you’ll see across campus, from the Edwardian Royal School of Mines building to the ultra-modern Main Entrance, designed by Foster + Partners.

Sitting in the heart of ‘Albertopolis’ (see pages 6–7), the campus houses the majority of our teaching facilities, as well as catering facilities, our state-of-the-art sports centre and most of our undergraduate accommodation. Yet it is compact enough for everything you need to be within walking distance.

There’s plenty of green space too, including our very own beautiful landscaped square, Prince’s Gardens, and a ‘secret garden’ with a space dedicated to herbs, fruit trees, flowers and vegetables planted by our Environmental Society.

Watch a video tour of our South Kensington Campus with some of our current students:

bit.ly/imperial-campus-tour



FACILITIES INCLUDE:



- ▶ Central Library, with 24-hour opening almost all year round (see page 42)
- ▶ Student Hub – a first point of contact for all student queries (see page 44)
- ▶ Imperial College Union, with its own dedicated building and Advice Centre (see page 52)
- ▶ Health Centre and Dental Surgery
- ▶ Catering outlets, offering a wide choice of food and drink, with discounts available for students
- ▶ Ethos sports centre with free access to gym and swimming facilities (see page 50)
- ▶ Early Years Education Centre, caring for children aged six months to five years (see page 45)



BEYOND SOUTH KENSINGTON

While most of our undergraduate teaching takes place at South Kensington, medical students usually undertake their clinical attachments at one of our specialist medical campuses. These are each based around a hospital and within easy reach of South Kensington:

- ▶ Charing Cross Campus, Hammersmith
- ▶ Chelsea and Westminster Campus, Chelsea
- ▶ Hammersmith Campus, East Acton
- ▶ North West London Hospitals Campus (Northwick Park and St Mark’s Hospitals in Harrow and Central Middlesex Hospital in North Acton)
- ▶ Royal Brompton Campus, Chelsea
- ▶ St Mary’s Campus, Paddington

Facilities at these campuses include specialist medical libraries and sports facilities.

We’re also developing a new campus in White City. Imperial West will house a range of state-of-the-art facilities, co-locating researchers and businesses, to speed up the translation of our research ideas and innovations into real world solutions.



- 1 Imperial Centre for Translational and Experimental Medicine, Hammersmith Campus
- 2 St Mary’s Campus
- 3 Imperial West, our new campus in White City, opening in 2016

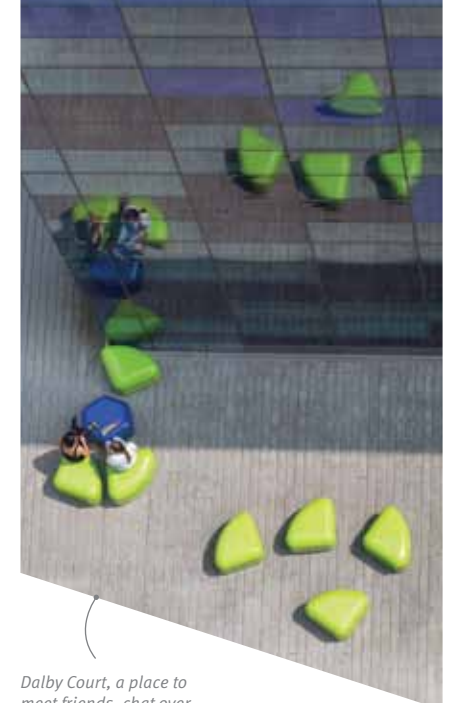
OUR CAMPUS

- 1 Main entrance on Exhibition Road
- 2 Sir Alexander Fleming Building

- 3 Bessemer Building
- 4 Royal School of Mines

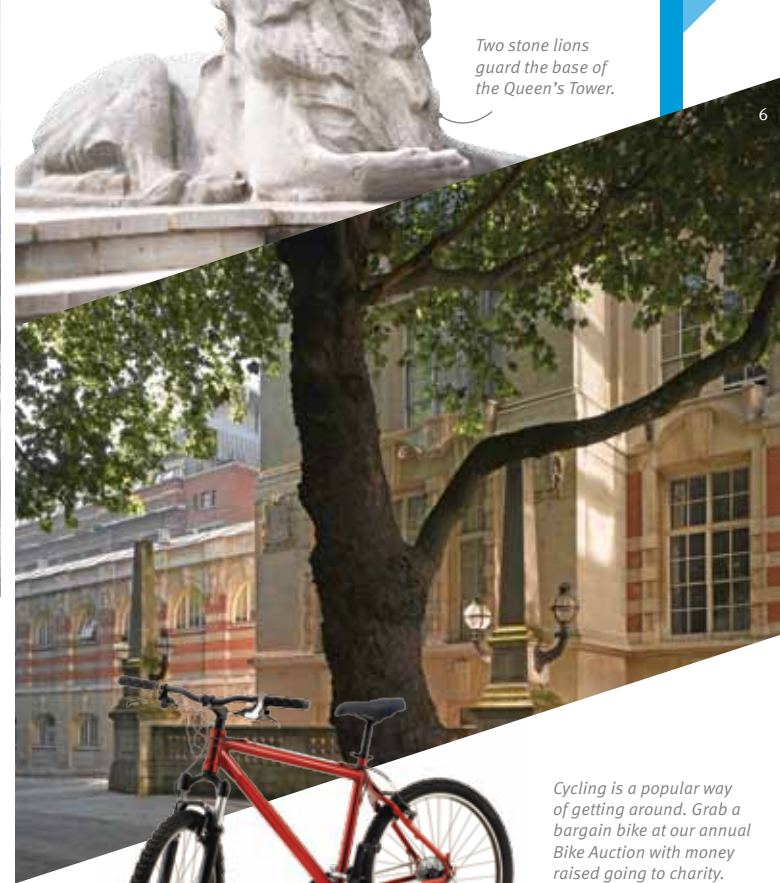
- 5 Faculty Building
- 6 RSC1 Chemistry Building

- 7 Central Library
- 8 Farmers' Market



Dalby Court, a place to meet friends, chat over coffee or just soak up the sunshine.

Cafés, restaurants, takeaway options and specialist food outlets make it easy to find variety for breakfast, lunch and dinner on campus – with discounts available with your student card.



Two stone lions guard the base of the Queen's Tower.

Cycling is a popular way of getting around. Grab a bargain bike at our annual Bike Auction with money raised going to charity.



Queen Victoria's statue in the College's main entrance was restored and unveiled by Queen Elizabeth II at our centenary celebrations in 2007.



THE LIBRARY

The Central Library at South Kensington is the primary home for our print collections and is open 24 hours a day all year round. The Library also offers one of the most extensive collections of electronic journals and databases in the country, most of which can be accessed on and off campus.

The Library is a great place to study with facilities including free Wi-Fi; silent, quiet and group study areas; and bookable rooms for project work and presentation practice.

Knowledgeable librarians are on hand to help you find what you need, including subject librarians for every department. We also work with the College's Disability Advisory Service to provide support for disabled students, including additional software and a book fetching service.

For information about training workshops run by the Library, see page 15.



↑ We have specialist libraries at five of our medical campuses which cover general medicine as well as specialisms such as psychiatry, AIDS, radiology and anaesthesia.

40

items can be borrowed at any one time with automatic renewals to help you stay on top of your loans

84,000

e-journals available online, including top science, engineering and medical publications

Free

document delivery service to help you source books and articles from around the UK and the rest of the world

Check out our Imperial Mobile app for your comprehensive guide to the College, including PC availability, campus maps, library catalogue, and live travel information.



COMPUTING FACILITIES

The College's computing facilities include Microsoft, Mac and Linux systems. All of our campuses and halls of residence have high-speed internet, with wireless access available in many areas.

You'll have 24/7 access to your own virtual learning environment (see page 15) and other online resources, including blogs. You can also install Microsoft Office software (including Word, Excel and Powerpoint) for free, as well as antivirus protection and other free and discounted software from our software shop. For help and support in using the facilities, or personal devices accessing College networks, our Service Desk is on hand.

Here to help

At Imperial you'll join a community that's rooting for you to succeed, with a dedicated network of support to help you reach your full potential.

The residential support team in each of our halls is a first point of call for help on matters relating to life in College accommodation – see page 46.

The tutorial system means you have a network of academic and pastoral support, stretching from your personal tutor to the independent College Tutors – see page 14.



STUDENT HUB

The Student Hub brings together all of Imperial's key support services in one easily accessible place. The team is on hand to answer your questions in person, by email or online on a wide range of topics including admissions, fees and funding, College accommodation and private housing, exchange programmes, and exam arrangements.

FIND OUT MORE:

www.imperial.ac.uk/studenthub

HEALTHCARE

All students living in halls are strongly encouraged to register with a GP local to their hall – for most this will be the Health Centre on our South Kensington Campus. There is also a dental surgery providing a full range of NHS treatments.

EMOTIONAL SUPPORT

The Student Counselling Service offers confidential short-term counselling to all students to talk about any issue that may be causing them concern. For overnight support during term time, Nightline provides a confidential listening and information telephone service run by student volunteers.

If you're staying in College accommodation, our Residential Support teams can provide support and advice, complementing the role of your personal tutor and the independent College Tutors.

DISABILITY SUPPORT

Students with a disability, specific learning difficulty, or enduring health or mental health issue can access free confidential advice and support from the Disability Advisory Service. You can get advice on a range of topics, from applying for a Disabled Students' Allowance to accessing assistive learning technology. One-to-one consultations with a disability advisor are also available to discuss your individual support needs.

CHILDCARE

The Early Years Education Centre provides places at the South Kensington Campus for children aged six months to five years. Part-time places are available. You may also be able to access financial help towards the costs. Please note, a waiting list applies.



THE ADVICE CENTRE

The College's network of support is complemented by a range of Union-run services, including the Advice Centre, staffed by a professional advisor. Pop in for free, confidential and impartial advice on a wide range of topics, including housing rights, debt advice, and advice on academic and any other welfare issues you may experience.

CHAPLAINCY AND RELIGION

The Multi-Faith Centre has Chaplains from many different religions, as well as prayer rooms and information on places of worship. More than 10 of Imperial College Union's student societies are faith-based to help you meet like-minded students. There is also a student-run Islamic prayer room on campus, and separate areas are available for male and female Muslims.

www.imperial.ac.uk/students/student-support

INTERNATIONAL STUDENT SUPPORT

APPLYING FOR A VISA

International students from outside the EEA usually need a Tier 4 student visa. The International Student Support team provides advice and guidance on applying for this visa before you come to Imperial. This support continues when you're here, with regular immigration updates and workshops covering topics such as working in the UK after you graduate.

SETTLING IN AT IMPERIAL

We organise welcome events for all new international students to help you make friends and adjust quickly to life in the UK. The team also organises trips throughout the year to help you discover the UK, as well as some of London's highlights.

OVERSEAS SOCIETIES COMMITTEE (OSC)

OSC represents all of Imperial's 40 international and cultural student societies, with a variety of events that are open to all students. The OSC also organises its own activities, including Imperial's largest international sports event, the OSC football World Cup tournament, and the annual i-night, celebrating our international student societies.

EXTERNAL SUPPORT

The College partners with a number of external organisations that offer further support:

- ▶ The UK Council for International Student Affairs offers online information and telephone advice.
- ▶ International Students House organises a variety of social events, talks, and trips within the UK and Europe.
- ▶ HOST UK can help you arrange to spend a weekend with a British family in a part of the UK that you would like to visit.

www.imperial.ac.uk/study/international-students

Home from home

Take the stress out of finding somewhere to live in London by exploring what the College has to offer. There is a lot of choice, and it's all within easy reach of our South Kensington Campus.

Our first year guarantee

All first year students who accept Imperial as their firm choice are **guaranteed a place in College accommodation** provided they are eligible and complete their application by the deadline.

For full terms and conditions, see: www.imperial.ac.uk/accommodation

£89-£253 PER WEEK

The weekly cost for our accommodation varies depending on room type and location.

Based on 2014-15 prices

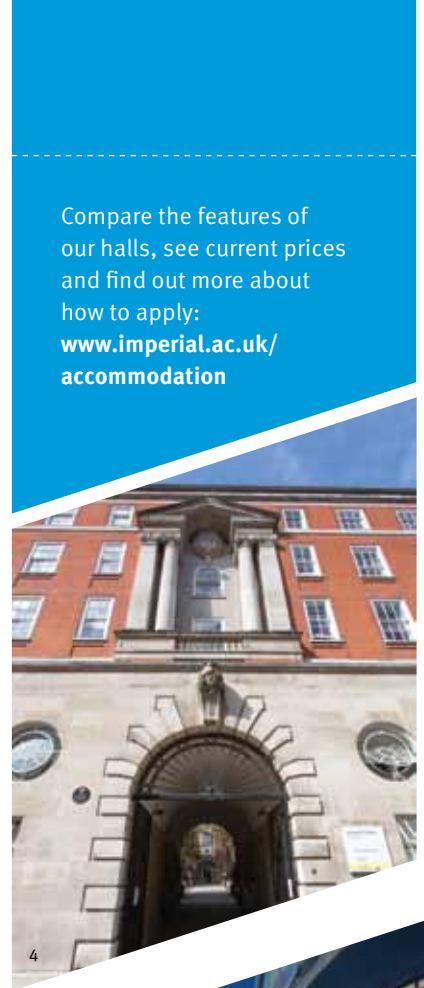
All of our accommodation is **self-catered**. If you don't fancy cooking there is a wide choice of catering outlets on campus and discounts are available with your student card.



Over 90% of Imperial undergraduates choose to live in our halls of residence in their first year. We have rooms for around 2,500 students in total, made up of single and twin rooms. You can specify your top five preferences during the application process and we'll try our best to match them.



You can stock up on your daily essentials in our convenience store on campus.



Compare the features of our halls, see current prices and find out more about how to apply: www.imperial.ac.uk/accommodation

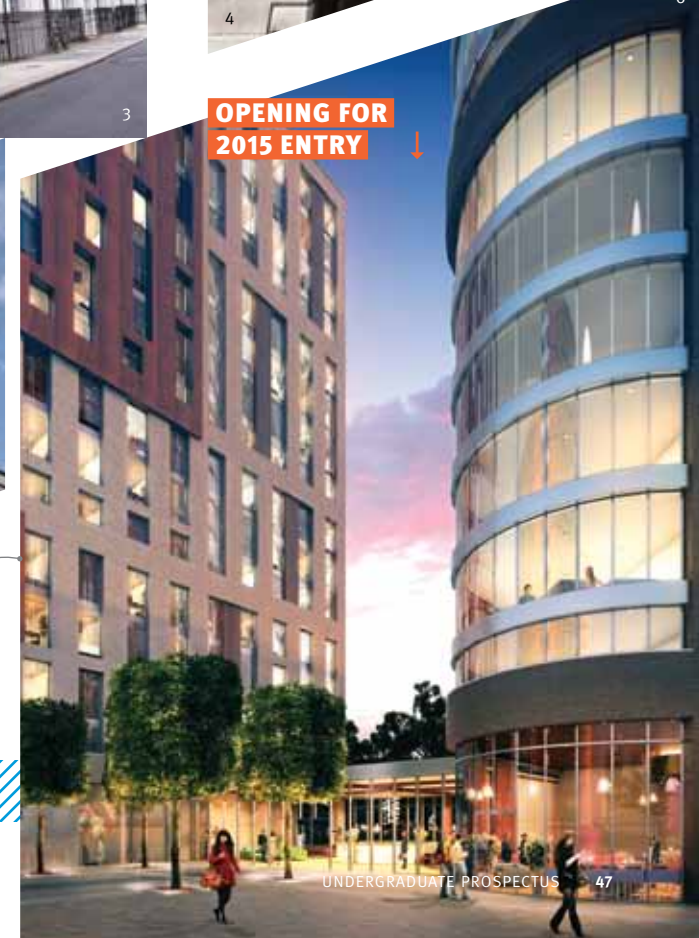
Each hall has its own unique community from different courses and countries. There is also a residential support team responsible for your wellbeing and for overseeing the day-to-day running of the hall. This includes a number of returning students who can provide informal advice on making the transition to College life.

-
- 1 Prince's Gardens, South Kensington
- 2 Weeks Hall, South Kensington
- 3 Wilson House, Paddington
- 4 Beit Hall, South Kensington
- 5 Boathouse, Putney
- 6 Woodward Hall, North Acton



A riverside location for our rowing teams to live and train

Our brand new hall has around 700 bed spaces. It is part of a 'student village' of over 2,000 students, with facilities including a gym, music rehearsal rooms, a coffee shop, restaurants and bars.



OPENING FOR 2015 ENTRY

APPLYING FOR ACCOMMODATION

A quick guide to what happens when:

MAY 2016

Applicants who have firmly accepted an academic offer from the College can begin applying for accommodation using our online system. You can specify your preferred hall, room type and price.

31 JULY 2016

The last date to apply for a guaranteed place in our accommodation.

1 AUGUST 2016

Applicants who have accepted Imperial as their insurance choice can start their accommodation application, though a place is not guaranteed.

EARLY SEPTEMBER 2016

Time by which all applications will be processed and rooms allocated.

SEPTEMBER 2016

Emails sent notifying you of your accommodation offer. You must accept this by a certain date and pay a £250 pre-payment to secure your room.

OCTOBER 2016

Moving in day – prepare for a warm welcome!

Current students will be on hand on moving in day to help you unpack and settle in.



Current students decorate the halls to welcome new students on moving in day

Many of our halls have their own social facilities. There is also a year-round programme of social and cultural events and sporting activities organised by the residential support team for each hall.

We take your safety seriously, so all halls have CCTV and swipe card or fob entry systems. The College also has 24-hour manned security offices around our campus accommodation and mobile patrols for outlying halls.

Our accommodation fees include all bills (rent, gas and electricity charges, high-speed internet in your room, and insurance of your personal possessions), and are paid on a termly basis so it's easy to keep track of what needs to be paid when. All contracts are for a minimum of 38 weeks, with the option to extend for the summer at some halls.

BEYOND THE FIRST YEAR

Many undergraduates move into privately rented accommodation from their second year onwards. London has a huge range of houses, flats and studios, but don't panic if you don't know where to start as our Student Hub team can provide plenty of advice and practical help. This includes a housing fair bringing estate agents, private landlords and other service providers to campus, and an annual 'Find a Flatmate' event to help you meet potential sharers.

Download our Area Guide on the accommodation website for an overview of local areas, average rent rates, local facilities, and travel times to our South Kensington Campus.

www.imperial.ac.uk/accommodation/privatehousing

The Student Hub is open every weekday, and also during the arrivals weekend at the start of each academic year to help new starters get settled.



GOT A QUESTION?

Before you even arrive, you can take advantage of a wide range of advice and support from our Student Hub to help you find a home that's right for you: accommodation@imperial.ac.uk

Disabled students and students with special requirements are encouraged to get in touch as early as possible for information about our purpose-built and adapted rooms, which offer full integration within our halls: disabilities@imperial.ac.uk

PROPERTY SEARCH WEBSITE

To help you navigate London's huge choice of properties, we run an online property search website exclusively for Imperial students. Imperial Home Solutions lets you search by type and size of property, price, area and travel time, and create your own property shortlist from a huge choice of rented properties offered by private landlords.

You can also connect with potential flatmates via the messageboard and access useful information to help with your search, including a checklist of what to look for when viewing properties and advice about paying deposits.

www.imperialhomesolutions.co.uk



Our advisors can provide tips on what to look for when viewing properties, as well as advice on tenancy agreements.



Sport and fitness

We support all of our students to enjoy an active lifestyle by providing free access to gym and swimming facilities across all of our campuses.

ETHOS SPORTS CENTRE

Ethos is a state-of-the-art sports centre on our South Kensington Campus. The facilities are of such a high standard that it regularly plays host to professional sports teams, recently including the London Lions basketball team and the New Zealand All Blacks rugby team. You can follow in their footsteps throughout your time here for free*.

*A one-off payment applies (£40 in 2014–15) to cover the personal induction required before you can use the gym's high-spec equipment.

HEALTH AND FITNESS

The Active Lifestyles team works hard to make sure that sporting ability is no barrier to anyone who wants to stay in shape, with fast classes in the gym, boot camps, nutrition workshops and group dance and exercise classes just some of the options available to keep you motivated.

Other year-round opportunities include challenges on our 9-metre climbing wall and a taster programme which gives you the chance to play one of six sports, with professional coaches on hand, but without the commitment of one of our competitive sports clubs.



Victoria and Albert rally the crowds at sports matches.

- 1 Jiu Jitsu
- 2 Ethos sports centre
- 3 Hockey
- 4 Surfing
- 5 Women's rowing
- 6 Fencing
- 7 Basketball
- 8 Energia fitness gym
- 9 Swimming
- 10 Football
- 11 Lacrosse
- 12 Exercise class

SPORTS CLUBS

Sport is a big part of life at Imperial, with a choice of around 100 clubs, welcoming players at all levels from beginner to semi-professional. Our clubs cover a huge range of competitive and recreational activities, including archery, badminton, BMX, cricket, fencing, hockey, polo, riding, rowing, rugby, skateboarding and snowsports. We also offer over 10 different martial arts.

Watch our sports clubs in action:

bit.ly/imperial-sports-day-in-the-life

Imperial was ranked top in the UK for rowing in 2013–14

SPORT SCHOLARSHIPS

If you are aspiring to be, or already are, competing at national or international level you may be eligible for a scholarship to help you to continue performing at the highest level while balancing the demands of academic work.

www.imperial.ac.uk/sports

1st in London

↑ Our overall ranking in the inter-university British Universities and Colleges Sport (BUCS) leagues 2013–14

FACILITIES

South Kensington Campus

- ▶ 25-metre swimming pool
- ▶ Fitness gym, exercise studio and climbing wall
- ▶ Strength and conditioning gym
- ▶ Sauna, steam room and spa
- ▶ Sports hall with five badminton and two squash courts
- ▶ Sports injury treatments

Boathouse, Putney

- ▶ Refurbished fitness gym, and workshop with boat racking
- ▶ Coaching, physiotherapy and sports therapy

Charing Cross Campus

- ▶ Fitness gym

Hammersmith Campus

- ▶ Fitness gym

Harlington sports ground

- ▶ Floodlit grass and hockey AstroTurf pitches, plus 3G AstroTurf training areas
- ▶ Ten football, three rugby and two lacrosse pitches
- ▶ Two cricket squares
- ▶ Strength and conditioning gym
- ▶ Pavilion with bar/function room

Heston sports ground

- ▶ Fitness and weights gym
- ▶ Five squash courts, basketball and badminton facilities
- ▶ Five football and two rugby pitches
- ▶ Six grass and six hard floodlit tennis courts
- ▶ Two floodlit netball courts to support a wide range of activities.
- ▶ A shooting range

Mountain Hut, North Wales

- ▶ Climbing, canoeing and mountain biking

St Mary's Campus

- ▶ 20-metre swimming pool
- ▶ Fitness gym



Our new sports ground at Heston has space for five football and two rugby pitches, alongside facilities to support a wide range of activities. See right.

Students' Union

Master a new skill, take up a new sport or embrace a new challenge. Never again are you likely to have such freedom to learn about yourself and what you enjoy – and Imperial College Union is here to make it happen.

Imperial has an age-old tradition of mascotry, with 11 mascots representing the different College Unions. Learn more at: www.imperial.ac.uk/mascots

MAKE YOUR VOICE HEARD

Imperial College Union plays a vital role in standing up for the interests of all of our students, from the Officer Trustees, who are responsible for putting your ideas into action, to the 500+ academic representatives who make sure you have a say in how your course is run. In 2013–14, over 3,000 Imperial students helped fill the huge range of volunteer positions available in the Union, ranging from Chair of the Cheese Society to Student Trustees who help oversee how the Union is run.



Beit Quad, home of Imperial College Union, which sits directly behind the Royal Albert Hall.



TAKE TIME OUT

The intensity of undergraduate study at Imperial can be demanding, so it's important to find time for outside interests. The Union oversees and funds one of the largest ranges of clubs, societies and projects of any UK university, so you will have hundreds of opportunities to meet new people, learn new skills and try things you have never done before. See overleaf.

GIVE BACK

Imperial College Union engages over 2,500 volunteers to run its activities each year with opportunities available in the local community, across London and internationally through Community Connections. Your volunteering activities can be accredited through the Union's Imperial Plus scheme to show employers the skills you have gained. Almost 16,000 volunteer hours were recorded via Imperial Plus in 2013–14.

Felix the Cat is the official mascot of Imperial's student newspaper, *Felix*. The weekly paper was spawned from the College's arts magazine *Phoenix*, which was established by *War of the Worlds* author and former Imperial student H.G. Wells. Read the latest news:

felixonline.co.uk

RELAX, UNWIND AND ENJOY

The Union has its own building on campus, including two bars, a nightclub, a brand new Media Centre, and an Advice Centre providing independent and confidential support. In addition, it runs a shop and newsagent on the South Kensington Campus, as well as a bar at the Charing Cross Campus. Every penny raised in Union outlets is reinvested into their services for the benefit of the entire student body.



→ TIME TO RELAX IN METRIC, THE CLUB ON CAMPUS



THE SUMMER BALL IS ONE OF THE LARGEST UNION EVENTS



www.imperialcollegeunion.org

WORK HARD, PLAY HARD

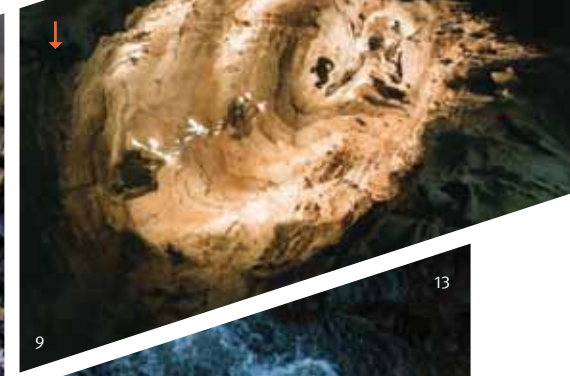
Here are just some of the 320+ student-run clubs, societies and projects you might consider joining. And check out what's on offer from our constituent unions: the Imperial College School of Medicine Students' Union for medical students, the City and Guilds College Union for engineering students, the Royal College of Science Union for our scientists, and the Royal School of Mines Union for students in the departments of Earth Science and Engineering and Materials.

→
**TUNE IN TO OUR
AWARD-WINNING
RADIO STATION AT
ICRADIO.COM**



The Union Building is home to two full-size snooker tables where members can practise and play every day.

THE CAVING CLUB BECAME THE FIRST TO TREAD THE FLOOR OF THE LONGEST CAVE IN SLOVENIA



Clubs and societies pictured:

- 1 IC Radio
- 2 Cheese
- 3 Musical Theatre
- 4 Chess
- 5 RAG
- 6 Imperial College Symphony Orchestra
- 7 Snooker and Pool
- 8 Science Fiction and Fantasy
- 9 Caving
- 10 Parkour, Free Running and Gymnastics
- 11 Basketball
- 12 Fellwanderers
- 13 Canoe
- 14 American Football
- 15 Juggling
- 16 Racing Green
- 17 Karate Shotokan



The Basketball Club has three men's and one women's team. The 2014 men's basketball varsity match was held at the Copper Box Arena at the Olympic Park in Stratford.



Fees and funding

Imperial offers one of the most generous overall student financial support packages for home students studying in the UK. It is designed to provide help with living costs, in addition to any government loans and grants to which you may be entitled.

Home students can use our online Student Finance calculator to estimate the Imperial Bursary and government support available to them:
www.imperial.ac.uk/studentfinance/calculator

NO FEES UPFRONT

If you are a Home or EU student you can apply for a non-means tested Tuition Fee Loan from the government to cover the entire cost of tuition for every year of study. You only start to pay back the loan once you have left university and are in employment, earning a pre-tax salary of £21,000* a year or more.

As repayments are linked to your earnings and not the loan itself, the amount you owe in total will have no effect on your repayments. Instead the amount you repay per month is calculated on how much you're earning above the threshold.

Student loans repayment

Current threshold for repayment:
£21,000*

Repayments:
Calculated at 9% of the amount you're earning over the threshold

EXAMPLE

CURRENT AVERAGE STARTING SALARY FOR IMPERIAL GRADUATES £29,232/year

AMOUNT YOU'RE EARNING OVER THE THRESHOLD £8,232

AMOUNT YOU REPAY (9% OF £8,232) **£61.74/month**

* This threshold will change in line with average UK earnings each year, starting from April 2017.

Find out more about loans and grants:
www.imperial.ac.uk/study/ug/fees-and-funding

£9,000
TUITION FEES FOR HOME AND EU STUDENTS IN 2015-16

The fee for 2016 entry will be published in the summer of 2015. For the latest information relating to tuition fees, please check the website:

www.imperial.ac.uk/study/ug/fees-and-funding



LOANS AND GRANTS FOR LIVING COSTS

Student Finance England Maintenance Loans

Maintenance Loans from the government are available to all full-time English students to help them cover their living costs. All students who are eligible for the loan can receive up to 65% of the maximum loan amount regardless of their financial situation. The maximum loan amount is £8,009 per year for students living away from home in London in 2015-16. Access to the remainder is dependent upon your household income. These loans are subject to the same repayment conditions as Tuition Fee Loans so you will only start paying them back once you are working and earning more than £21,000* per year.

Student Finance England Maintenance Grants

Full-time English students whose household income falls below £42,875 (for 2015 entry) will be eligible for a Maintenance Grant from the government to help with living costs. The amount is calculated on a sliding scale based on your household income and where you are living. The bigger the grant the smaller the Maintenance Loan you can get, though you will not have to pay the grant back. You can get up to £3,387 (2015 entry figure), depending on your circumstances. The figures for 2016 entry are expected to be published in early 2016.

Students from Northern Ireland, Scotland or Wales

Similar living cost support is available for students from Northern Ireland, Scotland or Wales – contact your relevant funding body for more information.

TIPS FOR MANAGING YOUR MONEY

With good budgeting it's possible to make your money go a lot further, so you can really make the most of your time as a student:

30%



The discount available on certain season tickets and travelcards with a Student Oyster photocard – see www.tfl.gov.uk. For transport beyond London, try booking in advance for cheaper fares or explore other forms of travel such as coach services Megabus and National Express.

Use your College ID card to access a range of student discounts, offered by many cinemas and theatres, high street shops and some restaurants.

Think about part-time work to add to your funds – although you should aim to work no more than 10-15 hours per week, principally at weekends, to leave enough time for your studies.

Text books can be expensive – see if you can buy second-hand from sites like eBay and Amazon or check Imperial's library collection.



FINANCIAL SUPPORT FROM IMPERIAL



IMPERIAL BURSARY

Our bursary scheme is one of the most generous in the UK. Unlike most other UK universities, which cap their financial support at the government threshold (£42,875*), the Imperial Bursary is designed to provide support on a sliding scale to Home students with a household income up to £60,000 per year – and it does not have to be paid back.

In addition, we don't distinguish between students living at home and away from home. And as long as your household income remains below £60,000, you will automatically qualify for this funding for each year of your course.

Imperial Bursary

ANNUAL HOUSEHOLD INCOME	NON-REPAYABLE BURSARY AMOUNT 2016-17
£0-£16,000	£5,000
£16,000-£50,000	£4,000
£50,000-£55,000	£3,000
£55,000-£60,000	£2,000

Graduate Medicine students are not eligible for the Imperial Bursary. Exclusions also apply to repeat years of study and NHS-funded years for medical courses.

* Figure for 2015 entry; 2016 figure is expected in early 2016.

IMPERIAL SCHOLARSHIPS

President's Scholarships

This prestigious scheme rewards up to 110 applicants to the College each year. It is open to all students of any nationality who demonstrate the highest academic excellence and potential and is funded entirely by philanthropic donations from generous alumni and supporters of the College.

Each President's scholar will receive £3,000 for their first year of study. You do not have to formally apply for an award – each department will nominate their best students based on academic merit and potential.

Undergraduate scholarships

We have a growing number of undergraduate scholarships based on academic merit and/or financial need. We also have sports and music scholarships.

Search all of our scholarships in one place:
www.imperial.ac.uk/study/ug/fees-and-funding/bursaries-and-scholarships

FUNDING FOR NON-EU STUDENTS

Apart from Imperial-specific scholarships, students who are resident overseas can usually obtain information on scholarships from their Ministry of Education or from their country's British Council education advisor.

www.educationuk.org/global



BUT ISN'T LONDON EXPENSIVE?

It can be costly to live in any big city, but with access to hundreds of discounts, coming here as a student is one of the most cost effective times to do it. And with sensible planning it's possible to enjoy London life to the full.

Below is a rough guide to what you should expect to spend to live in reasonable comfort in London. Estimates cover accommodation, food and travel within London but exclude tuition fees. Actual costs will vary according to your lifestyle.

Some students may consider budgeting for 52 weeks:

www.imperial.ac.uk/study/ug/fees-and-funding/managing-your-money

Approximate living costs for academic year 2016-17

	WEEKLY	39 WEEKS
Accommodation	£152	£5,928
Food and utilities	£55	£2,145
Travel†	£28	£914
Personal and leisure	£55	£2,145
Books and course costs	£10	£390
Total	£300	£11,522

† Zones 1-3 with 18+ Student Oyster card

NEED SOME ADVICE?

Imperial's Student Financial Support team can offer advice and support on how to fund your studies, including student loans, grants, bursaries, scholarships and other sources of funding.

Scholarships, bursaries and government-funded financial support:

student.funding@imperial.ac.uk

Tuition fees:

tuition.fees@imperial.ac.uk

www.imperial.ac.uk/study/ug/fees-and-funding

How to apply

We welcome applications from all over the world and from students from all kinds of backgrounds. No matter where you are from, you need to apply to the College via the UCAS online application system.

Here's what you need to know about applying to Imperial.

UCAS code

I50

↑ All applications to the College should be made through UCAS, the Universities and Colleges Admissions Service, using Imperial's institution code.

Get a head start on your application. Come to an Open Day – speak to current staff and students to find out what your chosen department is looking for in its applicants. Find out more on page 137.

Tips on how to write an excellent personal statement:

▶ bit.ly/imperial-personal-statements



Find out what makes a successful Imperial applicant in a talk from one of our admissions tutors:

▶ bit.ly/imperial-what-we-look-for-in-applicants



STEP-BY-STEP GUIDE TO APPLYING

THINK OUTSIDE THE BOX

Don't just think about subjects you're studying now, think about how you could apply them. Science and mathematics are a fantastic springboard to some really exciting careers, so explore all the options for using them at Imperial.

Biotechnologists are helping to protect our future food supply.

NASA employs some of the world's finest materials scientists.

Formula One racing cars are designed and built by mechanical engineers.



CHECK THE ENTRY REQUIREMENTS

All of our departments specify particular grades and subjects for entry, so make sure you meet our criteria. We also welcome a wide range of international qualifications – check our online country index for minimum requirements.

www.imperial.ac.uk/study/ug/apply/requirements/ugacademic

Don't forget about the College's English language requirements – these apply to all applicants, even those from the UK who speak only English and are educated solely in English. See page 62.

Some of our departments also ask for admissions test scores as part of their entry requirements. Check our course pages (64–129) for more information.

APPLY ONLINE THROUGH UCAS

UCAS's online application process for 2016 entry opens on 1 September 2015, so start yours early to make sure you get your application in on time:

15 October 2015

Deadline for applications for our Medicine courses

15 January 2016

Deadline for applications for all other Imperial courses

www.ucas.com/how-it-all-works

You can apply for up to five courses at the same time though only four of these can be for Medicine, Dentistry or Veterinary Science. You must register with UCAS's online system before applying.

CHECK IF INTERVIEW IS REQUIRED

Many of our departments interview applicants who impress on their UCAS form before making a decision. This usually forms part of an admissions day or may be via Skype for international applicants. See the courses section on pages 64–129 for details.

TRACK YOUR APPLICATION

Find out if you've been made an offer through UCAS Track. Offers may be one of two types:

- ▶ An unconditional offer means you've already met our entry requirements so the place is yours if you want it.
- ▶ A conditional offer will set out what you need to do before your place can be confirmed i.e. achieve certain grades in certain subjects by a set date.

Choose a firm and insurance choice (if you've received more than one offer) and reject any other offers you have received.

ENGLISH LANGUAGE REQUIREMENTS

All applicants to Imperial – even those from the UK who speak only English – must prove that they have a good level of written and spoken English before their place can be confirmed. We accept a wide range of English language qualifications: the minimum standards for some of these are shown below, though some departments may set higher requirements.

- ▶ **Cambridge Certificate in Advanced English (CAE):** 176 overall (minimum 169 in all elements for tests taken from January 2015)
- ▶ **GCSE, IGCSE or GCE O-level:** Grade B
- ▶ **IELTS:** 6.5 overall (minimum 6.0 in all elements)
- ▶ **Pearson PTE:** 62 overall (minimum 56 in all elements)
- ▶ **TOEFL iBT:** 92 overall (minimum 20 in all elements)

You usually have to supply your test score by July in the cycle in which you apply, even for deferred entry. For details of all acceptable English language qualifications, and minimum grades required:

www.imperial.ac.uk/study/ug/apply/requirements/english

CENTRE FOR ACADEMIC ENGLISH

The Centre provides a free in-session programme of courses and classes for undergraduates whose first language is not English. This includes:

- ▶ academic writing
- ▶ academic presentations
- ▶ social and cultural English
- ▶ speaking and listening
- ▶ one-to-one consultations
- ▶ self-study resources in our virtual learning environment, Blackboard

www.imperial.ac.uk/academic-english

ACADEMIC TECHNOLOGY APPROVAL SCHEME (ATAS)

Overseas students applying for an MSci or MEng degree in certain subjects may need to apply for an Academic Technology Approval Scheme (ATAS) certificate before they can apply for a student visa. If required, this will be specified in your academic offer and must be obtained by a set date in July in the cycle in which you apply.

www.gov.uk/academic-technology-approval-scheme

DIRECT ENTRY TO SECOND YEAR

We consider applications for second year entry to some of our courses and look for candidates who have successfully completed the first year of a comparable degree course at another institution with a high level of achievement. We would normally expect a candidate to have satisfied our first year entry requirements. If you wish to find out about the possibility of being considered for second year entry, you should contact the relevant department directly giving full details of your academic background and your current course – see contact details on pages 64–129.

All applications for second year entry must be made through UCAS. Please note that for the MBBS Medicine course, second year entry or transfer is not permitted.

www.imperial.ac.uk/study/ug

What can you study at Imperial?

“Everyone at Imperial came here for more or less the same reasons, and that counts for more than I expected when you’re making friends with people. We’re not all massive geeks, though we have those too, but being at Imperial means you’re down with talking science over lunch and will inevitably get excited over something in your lectures.”

Jelle, 1st year BSc Biochemistry

DEPARTMENT OF

Aeronautics

The science behind the design of vehicles and structures that interact with air, with application to aircraft and other flight vehicles, motorsports, and energy

110

→ Total expected intake

6.1:1

→ Applications: admissions ratio (for 2013 entry)

20.8:1

→ Student: staff ratio (2013–14)

The Department

Imperial's Department of Aeronautics is at the cutting edge of aerospace teaching and research. The dual accreditation of our degrees (see right) demonstrates the broad base of engineering, computational and analytical skills that they deliver, as well as the specific knowledge and experience required for careers in the aeronautical industry.

Our research and teaching facilities are first class – some are unique to the UK and many are also used by commercial companies. These include a Mach 9 hypersonic gun tunnel, a variable Mach supersonic wind tunnel and a range of large low-speed tunnels, many of which have benefitted from recent upgrades and an extensive investment in new equipment. The Department also operates a water flume facility and a MOTUS flight simulator (the only one of its kind in the UK), which enables students to test-fly their own designs.

We have extensive links with the aerospace industry and other world class universities. These provide unique opportunities for our students to study abroad or undertake a year in industry as an integrated part of their course. Coupled with our excellent reputation for teaching and research, and a growing number of academic staff, these make Imperial an exciting and vibrant place to study aeronautics.

The Honda Low Speed Wind Tunnel is a facility for aerodynamic development and safety evaluation studies of road and racing cars, aircraft, buildings and structures. It has brand new state-of-the-art data processing software and computing hardware.

OUR DEGREES

QUALIFICATION AND DEGREE TITLE	UCAS CODE	ECTS CREDITS*	LENGTH
MEng Aeronautical Engineering ●	H401	240	4 years
MEng Aeronautical Engineering with a Year Abroad ●	n/a†	240	4 years
MEng Aeronautical Engineering with a Year in Industry ●	n/a†	300	5 years

* For more information about ECTS credits see page 130.

† Apply initially for MEng Aeronautical Engineering (H401).

● PROFESSIONAL ACCREDITATION

All of our degrees are accredited by the Royal Aeronautical Society (RAeS) and the Institute of Mechanical Engineers (IMechE) – see page 9. They also lead to the award of the Associateship of the City and Guilds of London Institute (ACGI) – see page 130.

ENTRY REQUIREMENTS

A-LEVEL GRADES

A* A* A or **A* AAA** overall, to include:

A* Mathematics
A*/A Physics

Further Mathematics is strongly encouraged but not essential. General Studies and Critical Thinking are not accepted.

IB SCORES

40 points overall, to include:

7 Mathematics at higher level
6 Physics at higher level

ADDITIONAL CRITERIA

- ✓ Interview – candidates who demonstrate potential on their UCAS form
- ✓ Mathematics test (taken by invited candidates alongside their interview)

A minimum standard of English language applies for all applicants – see page 62 for details.

These are the minimum entry requirements for the Department – actual entry requirements may vary. For Year Abroad degrees an additional language qualification may be required.

For more information see: www.imperial.ac.uk/study/ug/aeronautics



DID YOU KNOW?

Parts of a car's bodywork could double up as a battery, thanks to a new material developed by Imperial engineers and scientists and European Union partners, including Volvo.

The material can store and discharge electrical energy. It is also strong and light enough to be used for parts in future hybrid vehicles, to make them lighter, more compact and more energy efficient.



Aeronautics students at Imperial can fly their own designs for the planes of the future on the MOTUS flight simulator, which accurately replicates their full flight characteristics. The simulator is the only one of its kind in the UK.

What our graduates do

All of our degree programmes, including at undergraduate level, lead to postgraduate-level qualifications, making our graduates highly sought after for a range of careers in the aerospace industry, manufacturing, consultancy, research and development, and in other fields as diverse as teaching or finance.

Recent graduates of the Department have become...

- 1 Aerodynamics engineer, Red Bull Racing
- 2 Astronaut, European Space Agency (ESA)
- 3 Aircraft performance engineer, Airbus
- 4 Pilot, RAF Red Arrows
- 5 Technology consultant, IBM

What you study

All students follow a common programme of study for the first two years. After this, students on target to achieve a 2.1 (or better) by the end of the second year may apply to transfer to our Year Abroad or Year in Industry streams, for placements in France or Germany via the Erasmus scheme, or in industry. Placements in the USA and Singapore are also available for students who achieve a 1st. Alternatively, you may continue on our standard programme.



↑ President's scholar Tereze setting up a 50kN universal test machine for a tensile test of a composite specimen

The first year provides a solid introduction to broad-based physical and engineering subjects. We introduce more specialised aeronautical material from year two onwards, including the opportunity to attend a flight-testing course.

In the third year, Year in Industry students and students on the standard programme study four core modules and a large selection of optional modules, including subjects such

as: helicopter dynamics; innovation management; aircraft systems engineering and unmanned vehicle technologies; and project management.

You will also take part in a six-week design project where, working in groups, you replicate a real design office in either an aircraft company or a Formula One racing team, in order to design a new vehicle.

Students on the Study Abroad stream spend the third year studying at a university abroad, following a course of study that is equivalent to the third year at Imperial, with formal assessments counting towards your degree. In France and Germany you will normally be taught in the host country's language, which you prepare for in years one and two.

Year in Industry placements take place between the third and fourth year, typically with a Formula One racing team or aircraft manufacturer.

In the fourth year, all students continue to study a mixture of core and optional courses and a four-month (six-week for year abroad students) individual research project in industry, at a research establishment or in a university in the UK or overseas.

There are opportunities throughout the course to take management modules and non-technical modules through the Imperial Horizons programme (see page 10).

FIND OUT MORE



Full course information
www.imperial.ac.uk/study/ug/aeronautics

Dr Paul Bruce
 +44 (0)20 7594 5048
aero.admissions@imperial.ac.uk

DEPARTMENT OF

Bioengineering

A highly interdisciplinary subject that applies engineering principles to solve practical problems in medicine or biology

85

→ Total expected intake

4.2:1

→ Applications: admissions ratio (for 2013 entry)

14.9:1

→ Student:staff ratio (2013–14)

The Department

The use of technology to solve medically important problems is increasing the demand for engineers who are also properly trained in basic medical science and human biology. This fusion of knowledge is known as bioengineering. The London Paralympic Games 2012 were a fantastic showcase for the work of bioengineers, from the prostheses that powered athletes such as Brazil's Alan Fonteles Oliveira, to the sport specific wheelchair that Great Britain's David Weir used to win four Paralympic golds.

Prostheses and medical devices are just one part of this rapidly growing field, which combines engineering innovation with diagnosis and treatment of health problems. The opportunities this presents are as diverse as the field itself, from medical devices such as pacemakers to brain-machine interfaces and imaging technologies such as CT, MRI and ultrasound to artificial organs.

Imperial's Department of Bioengineering is a world leader in its field, with expertise in a wide range of areas including robotics and human-machine interaction, the mechanics of body movement, and the development of biosensors. The cross-disciplinary nature of bioengineering means we collaborate with many departments across the College, giving you access to a breadth of expertise in areas such as mechanical engineering, electrical and electronic engineering, and computing.

The Department has strong links with the British Paralympic team. As part of the Rio Tinto Sports Innovation Challenge, students developed a new type of handlebar which was tested by three-time Paralympic silver medalist Jon-Allan Butterworth.

OUR DEGREES

QUALIFICATION AND DEGREE TITLE	UCAS CODE	ECTS CREDITS*	LENGTH
MEng Biomedical Engineering ●	BH9C	240	4 years
MEng Biomedical Engineering with a Year in Industry ●	n/a†	270	5 years

* For more information about ECTS credits see page 130.

† Apply initially for MEng Biomedical Engineering (BH9C)

● PROFESSIONAL ACCREDITATION

All of our degrees are professionally accredited by the Institution of Engineering and Technology (IET), the Institution of Mechanical Engineers (IMechE), the Institute of Materials, Minerals and Mining (IOM3) and the Institute of Physics and Engineering in Medicine (IPEM) – see page 9. They also lead to the award of the Associateship of the City and Guilds of London Institute (ACGI) – see page 130.

ENTRY REQUIREMENTS

A-LEVEL GRADES

A* A A

overall, to include:

- A* Mathematics
- A Physics
- A Biology, Chemistry or Further Mathematics

IB SCORES

38 points

overall, to include:

- 6 Mathematics at higher level
- 6 Physics at higher level
- 6 Third subject at higher level

ADDITIONAL CRITERIA

- ✓ Interview – candidates who demonstrate potential on their UCAS form
- ✗ Admissions test
- ✓ Grade B at GCSE (or equivalent) in Chemistry and Biology, either individually or as components of Combined Science

A minimum standard of English language applies for all applicants – see page 62 for details.

These are the minimum entry requirements for the Department – actual entry requirements may vary. For Year Abroad degrees an additional language qualification may be required.

For more information see: www.imperial.ac.uk/study/ug/bioengineering

What you study

All students follow a common programme of study for the first two years, covering topics such as medical science, mathematics, electronics, fluid mechanics and project management. This is designed to help you develop a deep understanding of fundamental engineering principles alongside an extensive knowledge of how the human body works.

In the second year, you will take part in a joint engineering design project with students from the Departments of Civil and Environmental Engineering, Mechanical Engineering and Electrical and Electronic Engineering as part of the Rio Tinto Sports Innovation Challenge. This project aims to unleash your creativity to improve the sporting and training equipment available to disabled people.

At the end of the second year students have the opportunity to specialise in an Electrical Engineering or a Mechanical Engineering pathway, or can continue along a general biomedical engineering pathway. There is also the opportunity to undertake a year in industry or study abroad in the fourth year of the MEng. The year in industry extends the MEng to 5 years, with the final year spent at Imperial.

Whichever pathway you choose, you have the freedom to take a range of optional modules in an area of biomedical engineering that particularly interests you, from other engineering departments such as Aeronautics (page 64), Materials (page 108), Chemical



DID YOU KNOW?

Researchers at the Royal British Legion Centre for Blast Injury Studies at Imperial are working with civilian engineers and military doctors to reduce the effects of roadside bombs and Improvised Explosive Devices (IEDs).



Researchers in the Centre for Blast Injury Studies on their test rig. The test rig is used to study the behaviour of the human skeleton under high impulse loading, such as in roadside bombs. Watch Prince Harry opening the Centre:

bit.ly/imperial-blast-centre



Dr Michelle Rogers, Dr Chi Leng (Agnes) Leong and a student working on a microfluidic chip developed to combine real-time measurement of neurochemical, electrical and physical measurements such as blood flow and local brain pressure to give a clear picture of the dynamics of tissue response to traumatic brain injury.

Engineering (page 72), Computing (page 84), Electrical and Electronic Engineering (page 98) or Mechanical Engineering (page 116). Our modules are constantly evolving to align with the latest industry developments and academic research.

In the final year you undertake a research project, part of which may be in association with another department at Imperial or with hospitals associated with the Faculty of Medicine (see page 120).

Graduate entry to medicine

There is an increasing demand for doctors with technical expertise in a wide range of medical specialties including cardiology, orthopaedics, radiology and surgery. A number of our graduates apply to enter graduate medical courses and follow a route leading to MEng and MBBS degrees.

What our graduates do

CNN's *Money* magazine ranks biomedical engineering number one for job growth prospects by 2020 (10 year forecast estimated from the US Bureau of Labor Statistics). The quadruple accreditation of our degrees (see page 69) will not only prepare you for a career in the rapidly growing field of bioengineering, but also provides a technical foundation for careers in mechanical engineering, electrical and electronic engineering, materials engineering and medical physics.

Recent graduates of the Department have become...

- 1 Device Development Engineer, Roche
- 2 Bioengineer, DePuy Orthopaedics
- 3 CEO, Radial Genomics Ltd
- 4 Computer Vision Researcher, Apple
- 5 Clinical Engineer, NHS

FIND OUT MORE



Full course information
www.imperial.ac.uk/study/ug/bioengineering

Liam Madden
+44 (0)20 7594 2703
be.ugadmissions@imperial.ac.uk

DEPARTMENT OF

Chemical Engineering

The design of processes for creating products that we all depend on, from petrol to pharmaceuticals

The Department

Chemical engineers bring about innovation and improvements in process industries, such as those concerned with the manufacture of chemicals, food, fuel and pharmaceuticals.

They achieve results by applying scientific, engineering and business principles to a variety of complex practical issues. The products of these industries play a major role in everyday modern life.

Imperial's Department of Chemical Engineering is one of the largest such departments in a UK university.

Our close collaboration with other Imperial departments and with industry partners in the chemical, energy (oil, gas and renewable), healthcare, and processing industries ensures that the content of our courses is always evolving to reflect our latest research discoveries, as well as the needs of the profession. The result is that our students have access to a large choice of advanced and specialised topics, which they can tailor to their own career preferences.

In addition, we place an emphasis on project work, grounded in real industry problems. This is supported by facilities like our Carbon Capture Pilot Plant (pictured right), which replicates many of the features you will encounter in the real world once you graduate.



Imperial's Carbon Capture Pilot Plant is the most sophisticated of its kind in an academic institution in the world. It provides a unique hands-on educational experience in a controlled and safe environment for the College's undergraduate engineers.

bit.ly/imperial-carbon-capture

ENTRY REQUIREMENTS

A-LEVEL GRADES

A* A* A or **A* AAA** overall, to include:

- A*** Mathematics
- A*/A** Chemistry
- A** in other relevant subject(s) including Physics, Biology, Further Mathematics, Economics

IB SCORES

39 points overall, to include:

- 7** Mathematics at higher level
- 6** Chemistry at higher level
- 6** Physics or Biology at higher level – Economics may also be considered

ADDITIONAL CRITERIA

- ✓ Interview – candidates who demonstrate potential on their UCAS form
- ✗ Admissions test

GCSE achievements (or equivalent) are also considered.

A minimum standard of English language applies for all applicants – see page 62 for details.

These are the minimum entry requirements for the Department – actual entry requirements may vary. For Year Abroad degrees an additional language qualification may be required.

For more information see: www.imperial.ac.uk/study/ug/chemical-engineering

120

→ Total expected intake

7.1:1

→ Applications: admissions ratio (for 2013 entry)

17.7:1

→ Student: staff ratio (2013–14)

OUR DEGREES

QUALIFICATION AND DEGREE TITLE	UCAS CODE	ECTS CREDITS*	LENGTH
MEng Chemical Engineering	H801	270	4 years
MEng Chemical Engineering with a Year Abroad	H802	270	4 years
MEng Chemical with Nuclear Engineering	H890	270	4 years

* For more information about ECTS credits see page 130.

PROFESSIONAL ACCREDITATION

These degrees are professionally accredited by the Institution of Chemical Engineers (IChemE) – see page 9. They also lead to the award of the Associateship of the City and Guilds of London Institute (ACGI) – see page 130.


WHAT CAN YOU STUDY?

What you study

In the first two years all students will study basic science and mathematics and how they apply to practical engineering problems. During this time you will analyse a variety of chemical processes, and learn about the many ways of contacting, reacting and separating different gases, liquids and solids on a large scale. We also introduce you to the basic social, economic and environmental factors that affect industrial operations.

Subjects studied in years one and two include basic principles of chemical engineering, mathematics, business for engineers and thermodynamics. You have a choice of more specialised subjects in year three, including, for example, environmental engineering, process design strategy and a wide range of business and humanities topics.

In the fourth year you have even more freedom to tailor the course to your interests through a broad choice of management and humanities options, as well as technical options from across the Faculty of Engineering. There is a continuous design element running through the degrees for all four years, with projects that increase in complexity at each year. Most students also have the chance to undertake an industrial placement at the end of year three.



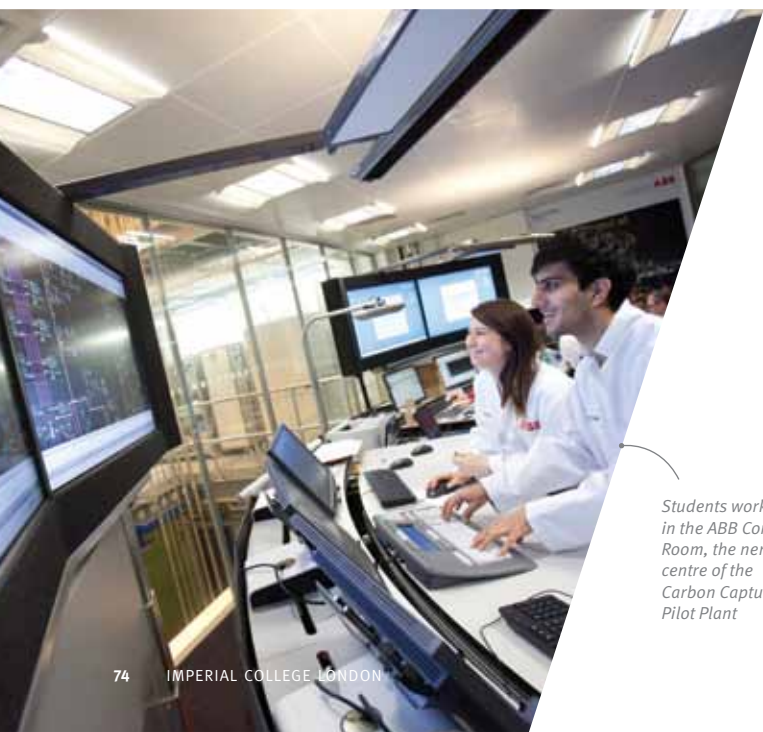
The creation of state-of-the-art laboratories for undergraduate teaching prompted a redesign of our lab-based curriculum to make the most of the high spec facilities.

YEAR ABROAD DEGREE

We provide a proven system of year abroad exchanges with leading institutions in Australia, USA and Singapore, and via the Erasmus scheme in France, Germany, the Netherlands, Sweden, Switzerland and Spain. A mixture of courses and individual or group projects will make up your time while abroad, with grades counting directly towards your Imperial degree. Ordinarily only students who are on track to achieve at least a 2.1 by the end of year two (or year three for final year placements) are eligible for selection.

CHEMICAL WITH NUCLEAR ENGINEERING

This degree combines the mainstream Chemical Engineering programme with specialist modules in years three and four in a range of subjects to prepare you for employment in nuclear or related industries. Subjects studied include nuclear thermal hydraulics, nuclear materials, and reactor physics.



Students working in the ABB Control Room, the nerve centre of the Carbon Capture Pilot Plant

What our graduates do

Our graduates enjoy a wide choice of careers in the process, energy and healthcare industries and in companies involved in the design and construction of chemical plants. Many graduates have also entered research organisations, public utilities, consultancy, and the information technology industry, with many opportunities for employment overseas.

Recent graduates of the Department have become...

- 1 Chemical engineer, Atkins
- 2 Field engineer, Schlumberger
- 3 Process engineer, Procter & Gamble
- 4 Production engineer, Shell
- 5 Risk, safety and RAM (Reliability) engineer, Monaco Engineering Solutions

FIND OUT MORE



Full course information
www.imperial.ac.uk/study/ug/chemical-engineering

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DID YOU KNOW?

Imperial researchers have created a spray-on fabric that enables designers to spray liquid material directly onto the body, using aerosol technology.

The Fabrican spray-on fabric consists of short fibres that are combined with polymers to bind the fibres together, and a solvent that delivers the fabric in liquid form, evaporating when the spray hits a surface.



DEPARTMENT OF

Chemistry

The composition, behaviour, structure, and properties of matter, and the changes it undergoes during chemical reactions

150

→ Total expected intake

5.8:1

→ Applications: admissions ratio (for 2013 entry)

17.2:1

→ Student: staff ratio (2013–14)

The Department

Imperial's Department of Chemistry has its historical roots as the original Royal College of Chemistry (RCC), founded in the 1840s with the support of Parliament to help ensure that chemistry in the UK was both practical and profitable.

The Department is situated in one of the earliest RCC buildings, on our South Kensington Campus. It has been upgraded with world class teaching and research facilities, including well equipped laboratories and workshops for the construction of mechanical and electronic instruments.

Today we remain true to our founding principles by placing a strong emphasis on a practical chemistry education that is relevant to industry. Our extensive links to the private sector are testament to this.

All of our degrees include intensive laboratory experience, which provides a framework for developing transferable skills alongside chemical techniques and scientific method.

We also offer a broad range of BSc and MSci degrees taught jointly with Imperial College Business School and the Centre for Co-Curricular Studies (see page 10), which give you the chance to tailor your degree to your own interests and career aspirations.

OUR DEGREES

QUALIFICATION AND DEGREE TITLE	UCAS CODE	ECTS CREDITS*	LENGTH
BSc Chemistry ●	F100	180	3 years
MSci Chemistry ●	F103	240	4 years
MSci Chemistry with a Year in Industry ●	F105	300	5 years
MSci Chemistry with Medicinal Chemistry ●	F124	240 [†]	4 years
MSci Chemistry with Medicinal Chemistry and a Year in Industry ●	F125	300	5 years
BSc Chemistry with Management ●	F1NF	240	4 years
BSc Chemistry with Management and a Year in Industry ●	FN11	240	5 years
MSci Chemistry with Research Abroad ●	F104	240 [†]	4 years
MSci Chemistry with Research Abroad and a Year in Industry ●	F101	300	5 years
MSci Chemistry with French for Science ●	F1R1	240 [†]	4 years
MSci Chemistry with German for Science ●	F1R2	240 [†]	4 years
MSci Chemistry with Spanish for Science ●	F1R4	240 [†]	4 years
MSci Chemistry with Molecular Physics ●	F1F3	240 [†]	4 years
MSci Chemistry with Molecular Physics and a Year in Industry ●	F1FH	300	5 years

* For more information about ECTS credits see page 130.

† The standard MSci programme lasts four academic years and carries 240 ECTS credits. Students may be able to undertake additional study or project work in the summer vacations to raise their ECTS count to 270 or beyond.

● PROFESSIONAL ACCREDITATION

These degrees are professionally accredited by the Royal Society of Chemistry – see page 9. They also lead to the award of the Associateship of the Royal College of Science (ARCS) – see page 130.

ENTRY REQUIREMENTS

A-LEVEL GRADES

AAA or A*AA overall, to include:

- A** Chemistry
- A** Mathematics
- A** Subject specified in your offer

Please note that most offers are made at A*AA to include A* in Chemistry or Maths.

IB SCORES

38 or 39 points overall, to include:

- 7** Chemistry at higher level
- 6** Mathematics or another science subject at higher level (7 in Maths required at standard level if not offered at higher level)

Please note that most offers are made at 39 points to include 7 in Chemistry and Maths at higher level.

ADDITIONAL CRITERIA

- ✓ Interview – candidates who demonstrate potential on their UCAS form
- ✗ Admissions test

A minimum standard of English language applies for all applicants – see page 62 for details.

These are the minimum entry requirements for the Department – actual entry requirements may vary. Additional subject entry requirements apply for our specialist degrees.

For more information see: www.imperial.ac.uk/study/ug/chemistry

WHAT CAN YOU STUDY?

Laboratory classes (including theoretical and mathematical methods laboratories, workshops and IT laboratories) will be a key part of your experience. These are designed to develop your practical and analytical skills and to help you gain confidence in applying a large number of different experimental techniques.

What you study

Years one and two of all degrees follow the same core course content supplemented by two optional modules that are designed to match your chosen programme of study. This structure offers you the opportunity to transfer between our chemistry degrees at a later stage providing you have studied the appropriate optional subjects in years one and two.

SINGLE HONOURS CHEMISTRY

Our core chemistry courses cover modules in inorganic, organic and physical chemistry in all years of study. In the fourth year MSci students can follow a broad or specialised programme by choosing from advanced topics in physical, organic, inorganic, biological and medicinal chemistry. Examples of current modules include Green Chemistry, Robot Chemistry, Pharmaceuticals (delivered by research staff from GSK), Agrochemicals (delivered by research staff from Syngenta), Solar Energy, and Fuel Cells and Renewal Energy.

CHEMISTRY WITH MOLECULAR PHYSICS

These challenging degrees are delivered by the Departments of Chemistry, Mathematics (page 112) and Physics (page 126) to focus on work at the boundary of these three disciplines, for example nano-engineering. Graduates of this course will gain strengthened knowledge of the physical and mathematical background for mastering physical methods of modern chemistry.

CHEMISTRY WITH MEDICINAL CHEMISTRY

These degrees combine our Single Honours Chemistry degree with modules that focus particularly on the industrial development, production and quality control of new drugs. They are ideal for students intending to work in the pharmaceutical and similar industries, and for those interested in chemical research in fields allied to medicine.

CHEMISTRY WITH MANAGEMENT

The four-year Chemistry with Management course consists of the first three years of F100 followed by a final year in the Business School. The five-year course is the same as the four-year course, with the addition of an industrial placement in the penultimate year prior to the year of management study.

FRENCH/GERMAN/SPANISH FOR SCIENCE DEGREES

These degrees allow you to spend an academic year studying at a French-, German- or Spanish-speaking university. They combine the chemistry elements of the MSci Chemistry degree with training in the language and culture of the country in which you are studying.

YEAR IN INDUSTRY DEGREES

These degrees allow you to gain experience of using chemistry in an industrial context. Rather than reducing the chemistry content, we have made these courses one year longer than their counterparts to accommodate the year in industry while still delivering the same comprehensive chemical education.



DID YOU KNOW?

Scientists in the Department have developed a system to quickly detect trace amounts of chemicals like pollutants, explosives or illegal drugs. The new system can pick out a single target molecule from 10,000 trillion water molecules within milliseconds, by trapping it on a self-assembling single layer of gold nanoparticles.



RESEARCH ABROAD DEGREES

These degrees combine our four-year MSci Chemistry degree with the opportunity to carry out the final year research project and some final year elective chemistry modules in a partner university abroad. If you choose to study in a partner university in Europe operating in another language, you will also have the chance to develop fluency in that language, preparing you for careers overseas.

Laboratory classes (including theoretical and mathematical methods laboratories, workshops and IT laboratories) will be a key part of your experience. These are designed to develop your practical and analytical skills and to help you gain confidence in applying a large number of different experimental techniques.

FIND OUT MORE



Full course information
www.imperial.ac.uk/study/ug/chemistry

What our graduates do

Chemistry graduates are recruited into practically every branch of industry. Over half of our graduates pursue a PhD, while others work in roles as diverse as industrial development, production and quality control of processes, marketing, and teaching. Importantly, our MSci programmes ensure that our degrees are recognised throughout Europe, where longer undergraduate degree programmes are the norm.



Recent graduates of the Department have become...

- 1 Fuels scientist, Shell
- 2 Finance analyst, Bank of America
- 3 Teacher, secondary school
- 4 Process chemist, Landsdowne Chemicals
- 5 Oil and gas consultant, Schlumberger

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DEPARTMENT OF

Civil and Environmental Engineering

The creation and maintenance of a sustainable natural and built environment

90

→ Total expected intake

6.4:1

→ Applications: admissions ratio (for 2013 entry)

13.0:1

→ Student: staff ratio (2013–14)

The Department

Civil engineers maximise the use of nature's resources in the creation of the infrastructure that is key to our quality and enjoyment of life. Such projects range from water supply and irrigation systems in developing countries through to large-scale construction like London's newest iconic landmark, The Shard. As well as minimising the environmental impact, today's civil engineers also need to control the pollution caused by such projects.

Imperial's Department of Civil and Environmental Engineering offers two Master's level undergraduate degrees lasting four years. This ensures that our students benefit from the highest quality education, recognised by research institutions and industry on a global scale. As a result, our graduates find themselves working in diverse and exciting roles around the world.

The Department has excellent facilities for teaching and research, including a range of testing rigs, extensive computing provision, tension and compression machines, and wave generators and tanks. Many facilities are also used by industry partners and for consultancy projects. Our strong industry links mean that many of our students are able to secure relevant work experience placements during vacation periods.



Dr Johannes Spinnenken supervising a student in the hydrodynamics laboratory in the Fluid Mechanics section of the Department. The laboratory is the largest of its kind in the UK university sector.

ENTRY REQUIREMENTS

A-LEVEL GRADES

A* A* A

overall, to include:

- A* Mathematics, with A grades in all modules (AS and A2 level) at the first attempt – Mechanics 1 (M1) is essential; M2 is desirable

A*/A Physics

IB SCORES

39 points

overall, to include:

- 7 Mathematics at higher level
- 6 Physics at higher level

ADDITIONAL CRITERIA

- ✓ Recruitment Day – candidates who demonstrate potential on their UCAS form
- ✓ Admissions test (as part of the Recruitment Day)

A minimum standard of English language applies for all applicants – see page 62 for details.

These are the minimum entry requirements for the Department – actual entry requirements may vary. For Year Abroad degrees an additional language qualification may be required.

For more information see: www.imperial.ac.uk/study/ug/civil-engineering

OUR DEGREES

QUALIFICATION AND DEGREE TITLE	UCAS CODE	ECTS CREDITS*	LENGTH
MEng Civil Engineering	H201	240	4 years
MEng Civil Engineering with a Year Abroad	H202	240	4 years

* For more information about ECTS credits see page 130.

PROFESSIONAL ACCREDITATION

Both degrees are professionally accredited by the Joint Board of Moderators which includes the Institution of Civil Engineers and the Institution of Structural Engineers – see page 9. Our degrees also lead to the award of the Associateship of the City and Guilds of London Institute (ACGI) – see page 130.

What you study

Both degrees follow a programme of core modules for the first two years to ensure that you gain a solid foundation in engineering science and technology. During year one you will study subjects such as mathematics, computational analysis, mechanics, structural mechanics, fluid mechanics, geotechnics, energy and infrastructure, environmental engineering science, and professional engineering practice.

You will also develop skills in computing, drawing, sketching, communication, team working and critical thinking, and attend a six-day field course in practical land surveying.



↑ Second year students working in groups to design modular pods for the London Olympic Stadium during a creative design class

In year two subjects include further study of fluid mechanics, structural mechanics, and environmental engineering, together with soil mechanics and engineering geology. You will also take part in engineering design projects and attend a week-long geology field course. Year two

concludes with the Constructionarium, a week-long course held at the National Construction College Campus in Norfolk. Working in teams, you form your own companies, and over the course of a week construct scaled-down versions of well known buildings, bridges, dams and other civil engineering projects.

In the final two years you can continue with a broad programme or tailor your studies to suit your personal and professional interests, with specialist modules available in structural engineering, environmental engineering, geotechnics, and transport engineering. Year three comprises core modules, two optional modules and a five-week group design project. Year four modules are all optional, and you will also undertake a major research-based project.

YEAR ABROAD DEGREE

A year abroad enhances your employability by providing the opportunity to challenge yourself personally in a different academic and cultural environment.

We currently offer opportunities for you to spend your final year studying at leading universities in Australia, Hong Kong or the USA, or via the Erasmus scheme in France, Germany, Spain, Italy, Switzerland or the Netherlands.

While abroad you study modules and undertake a major project (which may be in industry for students in France). Teaching is normally in the host language, so an acceptable proficiency in the language is required for France, Italy, Germany and Spain – language classes are available at Imperial (see page 10).

Selection takes place in year three and is competitive due to limited places. It is ordinarily only available to students who are on target to achieve at least a 2.1.



Students building a scale model of the Millau Viaduct under instruction from Dr Sunday Popo-Ola at the Constructionarium, held each year at the National Construction College Campus in Norfolk
▶ bit.ly/imperial-constructionarium

What our graduates do

All of our students gain valuable contact with industry throughout the course through visiting lecturers, field trips, the Constructionarium, our creative design course, and group and individual projects, offering valuable networking opportunities with future employers.

Recent graduates of the Department have become...

- 1 Structural Engineer (Buildings and Stadiums Section), Mott MacDonald
- 2 Graduate Engineer (Rail Strategy and Planning), WSP UK
- 3 Hydrologist, Create Consulting Engineers Ltd
- 4 Technical Engineer, Offshore Energy
- 5 Site Engineer, VINCI Construction Ltd



DID YOU KNOW?

Emeritus Professor John Burland helped save the Leaning Tower of Pisa from collapse. He oversaw an 11-year project to straighten the Tower by a full 45 centimetres.



FIND OUT MORE



Full course information
www.imperial.ac.uk/study/ug/civil-engineering

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DEPARTMENT OF

Computing

The engineering of computer hardware and software; the study of the mathematical principles of computing

168

→ Total expected intake

7.3:1

→ Applications: admissions ratio (for 2013 entry)

16.1:1

→ Student: staff ratio (2013–14)

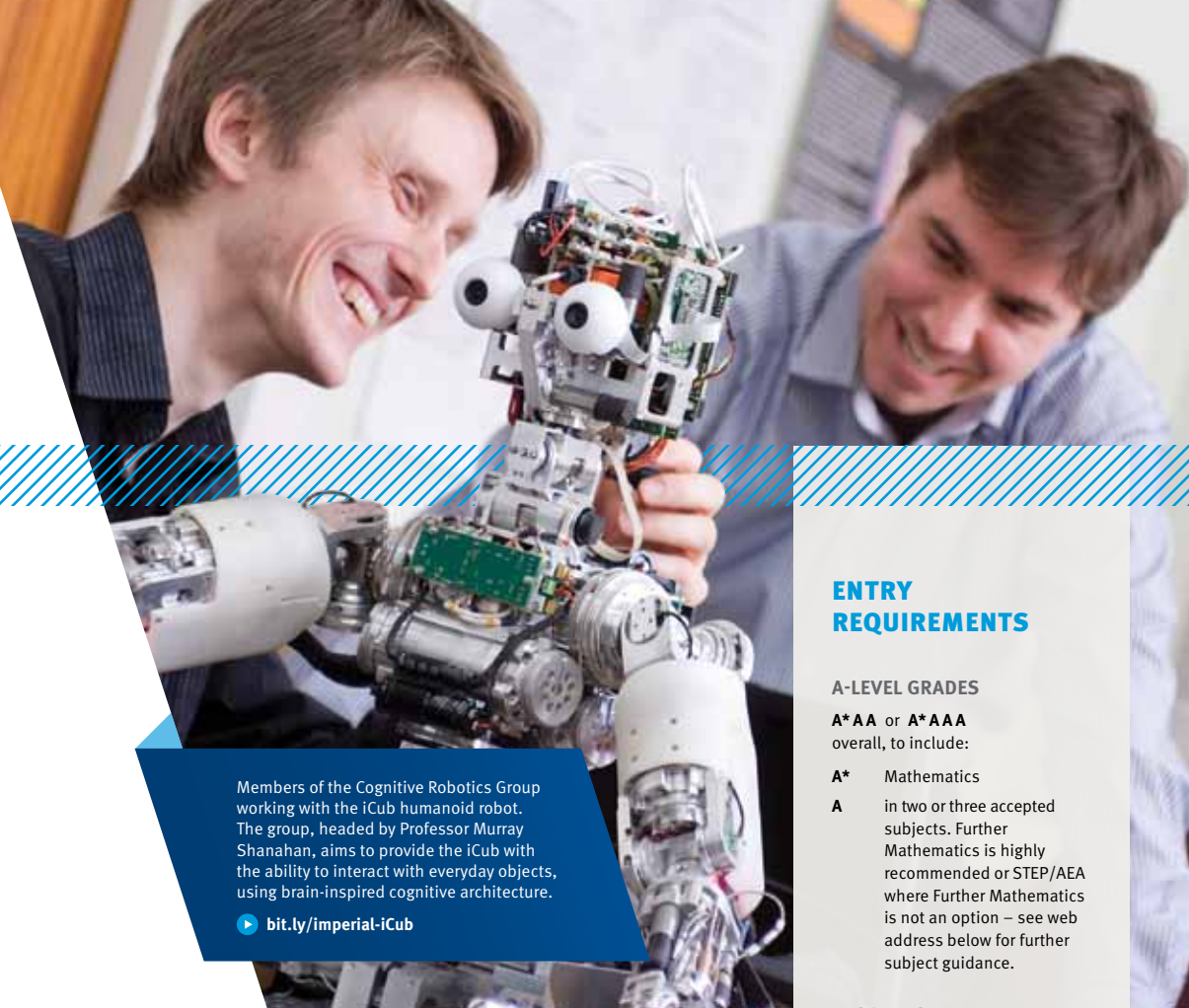
The Department

A computing degree gives you the opportunity to learn how modern computer and communication systems function and how they can be used and adapted to build the next generation of computing applications. It's a creative and wide-ranging subject that focuses on using sound underlying principles and clear logical thinking to design and build systems that really work.

Computing continues to be a growth industry. There are fewer barriers of age and gender than in many other industries, and it is leading the way in flexible working practices and career planning.

Our graduates do not just have the essential core skills but have also learned how to adapt to technological change, with its challenges and opportunities. Part of how we ensure this is by liaising with industry, from cutting edge start-ups to multinational household names. The result is that Imperial's computing graduates are some of the most sought-after worldwide and amongst the top five graduate earners in the UK, according to *The Sunday Times'* league of graduate salaries 2014.

The computing facilities in the Department are among the best in the UK. A rolling programme of equipment and software upgrades, including a renewal of one quarter of the 200 PCs in our labs every year, ensures that our facilities are both extensive and up to date.



Members of the Cognitive Robotics Group working with the iCub humanoid robot. The group, headed by Professor Murray Shanahan, aims to provide the iCub with the ability to interact with everyday objects, using brain-inspired cognitive architecture.

▶ bit.ly/imperial-iCub

ENTRY REQUIREMENTS

A-LEVEL GRADES

A* AA or A* AAA overall, to include:

- A*** Mathematics
- A** in two or three accepted subjects. Further Mathematics is highly recommended or STEP/AEA where Further Mathematics is not an option – see web address below for further subject guidance.

IB SCORES

39–41 points overall, to include:

- 7** Mathematics at higher level
- 6** Further relevant subject at higher level

ADDITIONAL CRITERIA

- ✓ Interview – candidates who demonstrate potential on their UCAS form
- ✓ Admissions test – if you are unable to attend an interview

A minimum standard of English language applies for all applicants – see page 62 for details.

These are the minimum entry requirements for the Department – actual entry requirements may vary. For the International Programme of Study an additional language qualification may be required.

For more information see: www.imperial.ac.uk/study/ug/computing

COMPUTING DEGREES

QUALIFICATION AND PROGRAMME TITLE	UCAS CODE	ECTS CREDITS*	LENGTH
BEng Computing	G400	180	3 years
MEng Computing	G401	270	4 years
MEng Computing (Artificial Intelligence)	G700	270	4 years
MEng Computing (Computation in Biology and Medicine)	G430	270	4 years
MEng Computing (Games, Vision and Interaction)	GG47	270	4 years
MEng Computing (International Programme of Study)	G402	270	4 years
MEng Computing (Computational Management)	G501	270	4 years
MEng Computing (Software Engineering)	G600	270	4 years

* For more information about ECTS credits see page 130.

PROFESSIONAL ACCREDITATION

These degrees are professionally accredited by IET (the Institution of Engineering and Technology) and BCS (the Chartered Institute for IT) – see page 9. All of our degrees also lead to the award of the Associateship of the City and Guilds of London Institute (ACGI) – see page 130.



Professor Daniel Rueckert teaching graphics in one of our computing labs. This course is open to both third year undergraduates and MSc students.

ENTRY REQUIREMENTS

A-LEVEL GRADES

A* A* A or **A* A* AA** overall, to include:

- A*** Mathematics
- A*** Further Mathematics
- A** in one or two accepted subject(s) – see web address below for further subject guidance.

IB SCORES

39–41 points overall, to include:

- 7** Mathematics at higher level
- 7** Further relevant subject at higher level

ADDITIONAL CRITERIA

- ✓ Interview – candidates who demonstrate potential on their UCAS form
- ✓ Admissions test – if you are unable to attend an interview

A minimum standard of English language applies for all applicants – see page 62 for details.

These are the minimum entry requirements for the Department – actual entry requirements may vary.

For more information see: www.imperial.ac.uk/study/ug/computing

MATHEMATICS AND COMPUTER SCIENCE DEGREES

QUALIFICATION AND PROGRAMME TITLE	UCAS CODE	ECTS CREDITS*	LENGTH
BEng Mathematics and Computer Science ●	GG14	180	3 years
MEng Mathematics and Computer Science ●	GG41	270	4 years
MEng Mathematics and Computer Science (Pure Maths and Computational Logic) ●	IG11	270	4 years
MEng Mathematics and Computer Science (Computational Statistics) ●	GI43	270	4 years

* For more information about ECTS credits see page 130.

● PROFESSIONAL ACCREDITATION

These degrees are professionally accredited by IET (the Institution of Engineering and Technology) and BCS (the Chartered Institute for IT) – see page 9. All of our degrees also lead to the award of the Associateship of the City and Guilds of London Institute (ACGI) – see page 130.

What you study

All of our Computing degrees follow broadly the same structure for the first two years. Core modules provide broad knowledge and skills in the science and engineering of computation, supplemented by a choice of optional modules, which may be relevant to your chosen specialism. This high level of shared content means that you can move between all of our Computing degrees, including between the BEng and MEng, at any time during the first two years.

The central core of our degrees has been designed to give you an overview of computing, an understanding of the basic concepts and principles, the ability to appreciate and to adapt to changes in technology, and practical experience in applied computing. We place special emphasis on the fundamental principles underlying computing and on the engineering considerations involved in computing system design, implementation and usage.

We provide a solid background in discrete mathematics (logic, sets, relations and grammars), which is the basic mathematics of computing, as well as in the classical mathematics and statistics relevant to applications engineering and management.

We also introduce you to computing architecture and hardware alongside the software which can exploit them. Advanced techniques such as artificial intelligence are also presented throughout, drawing on current research taking place in the Department.



A student studying coronary motion modelling for augmented reality guidance of endoscopic coronary artery bypass surgery

Throughout your studies you participate in project and design work, including a group project in the third year. In your final year you spend around eight months working on an individual project.

In the third year of the MEng degrees, you undertake an industrial placement, which provides valuable skills and experience. The placement extends from April until the end of September and in many cases leads to a job offer at the end of the final year.

ARTIFICIAL INTELLIGENCE

This degree focuses on artificial intelligence and knowledge engineering, and the development of computational and engineering models of complex cognitive and social behaviours. Study areas include: cognitive robotics, complexity, complex systems, computational finance, computer networks and distributed systems.

COMPUTATION IN BIOLOGY AND MEDICINE

This degree covers biology-related knowledge discovery through machine learning and construction of biological models using computing techniques. It also focuses on techniques in computer vision and robotics with applications in medical computing.

WHAT CAN YOU STUDY?

GAMES, VISION AND INTERACTION

This degree focuses on various technologies and algorithms for supporting the development of media-and arts-related applications such as computer games, visual effects and computer-generated art. It has a strong technical emphasis spanning topics such as computer systems, high-performance computer architecture, computer graphics, artificial intelligence and human-computer interaction.

COMPUTATIONAL MANAGEMENT

This degree covers the theory and tools of business management that require computerised solutions including decision support and constraint solving techniques. Typical study areas include operations research, computational finance, computing for optimal decisions and software engineering for industry.

SOFTWARE ENGINEERING

This degree focuses on how software is engineered to form complex computing systems. Study areas include: computational finance; introduction to bioinformatics; computer networks and distributed systems; computer vision; computing for optimal decisions; custom computing; distributed algorithms; databases; distributed systems; intelligent data and probabilistic inference; and graphics.

INTERNATIONAL PROGRAMME OF STUDY

Opportunities are currently available to spend year three studying at a leading university in the USA, or year four in France, Germany, or Switzerland via the Erasmus scheme. While abroad you will undertake a combination of modules and a major project, with grades achieved counting directly towards your Imperial degree.

Teaching is normally in the host language, except in Switzerland where it is in English. Acceptable proficiency in the relevant language is therefore required before you go, for which training is available at Imperial (see page 10).

Limited places means competition for some placements is strong so ordinarily only students who are on track to achieve a 2.1 degree or better are eligible for selection, which takes place in the autumn term of year two or three depending on the destination.



The College's Visual Information Processing research group is studying real-time computer vision, localisation and mapping with applications including mobile robot navigation.

JOINT MATHEMATICS AND COMPUTER SCIENCE (JMC) DEGREES

Taught jointly by the Departments of Computing and Mathematics (page 112), these degrees cover the essentials of computer science with a firm foundation in mathematics and how it applies to computing. All students undertake both group and individual project work. Students on the four-year degrees also undertake a four-month industrial placement.

What our graduates do

Our degrees open the door to a wide range of careers within IT companies and in industry, commerce, government and universities. Roles span entrepreneurship, technical innovation, management, analysis, consultancy, training and research.

Recent graduates of the Department have become...

- 1 Founder, Helftone
- 2 Software engineer, Google
- 3 PhD student, Imperial College London
- 4 Analyst, BAE Systems
- 5 IT programmer, Goldman Sachs

FIND OUT MORE



Full course information
www.imperial.ac.uk/study/ug/computing

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DID YOU KNOW?

Visual effects software created by former students John-Paul Smith and Allan Jaenicke, and used in films such as *Black Swan*, *Harry Potter* and *X-Men*, earned them Oscars in the Scientific and Technical Awards category at the 2013 Academy Awards.



Professor Philippa Gardner helping a student apply computer theory in the labs

DYSON SCHOOL OF

Design Engineering

The fusion of design thinking and engineering knowledge and practice, within an innovation and enterprise culture

The School

Design engineers are problem solvers who bridge the gap between traditional engineering and design to create innovative solutions to modern challenges, from improving passenger comfort on commercial airlines to designing next-generation sports prostheses.

It's a highly creative discipline that draws on knowledge of manufacturing techniques, product development, technical design and rapid prototyping to bring new innovations to market, and to improve existing products and the processes used for making them.

Our undergraduate course incorporates a broad range of engineering skills (including mechanical, biomedical and electronic engineering) to prepare you for careers in diverse roles. You'll have access to extensive hackspaces and workshops to support the development of your ideas, whether these come alive on the drawing board or fresh out of a 3D printer.

The School is home to an inspiring design community. This includes staff and students from the neighbouring Royal College of Art – partners in our two postgraduate degrees. Graduates of the School can be found in design and engineering roles in companies ranging from Sony and Samsung to Dyson and Brompton Bicycle, as well as being among the brains behind such products as Apple's iPhone and Sea-Doo.



Students demonstrating a device developed for the Rio Tinto Sports Innovation Challenge, to be worn by visually impaired Goalball players to transmit their vital signs to spectators and bring them closer to the action on the court, in a game played in silence

ENTRY REQUIREMENTS

A-LEVEL GRADES

A* A A

overall, to include:

A* Mathematics

All other scientific and non-scientific A-levels will be considered.

IB SCORES

38 points

overall, to include:

6 Mathematics at higher level

ADDITIONAL CRITERIA

- ✓ Interview – candidates who demonstrate potential on their UCAS form
- ✗ Admissions test

OUR DEGREE

QUALIFICATION AND PROGRAMME TITLE	UCAS CODE	ECTS CREDITS*	LENGTH
MEng Design Engineering	28G3	270	4 years

* For more information about ECTS credits see page 130.

PROFESSIONAL ACCREDITATION

This degree will welcome its first intake in October 2015. As a new degree, we're working towards gaining professional accreditation in line with the schedule set by the relevant professional bodies. It is expected that graduates of the programme will receive accreditation from at least one of the following:

- ▶ Institution of Engineering Designers (IED)
- ▶ Institution of Mechanical Engineers (IMechE)
- ▶ Institution of Engineering and Technology (IET)

This degree also leads to the award of the Associateship of the City and Guilds of London Institute (ACGI) – see page 130.

New for
2015 entry

60

→ Total expected intake



This device, developed by students in the School for disabled sport shooters, enables the user to move, aim and fire a gun mechanism using just head and mouth movements.

What our graduates do

Graduates of the School of Design Engineering have gone on to highly successful careers in Samsung, Apple, Philips, IDEO, Dyson, Bentley, Interbrand, Nokia and Mars as well as a wide array of start-ups such as Bare Conductive, Concrete Canvas, Omlet, Armourgel, Takram Design Engineering, and Wattson.



DID YOU KNOW?

Students have developed a prototype radio called Rapport that can pick up on key facial cues to determine the mood of the listener and find appropriate music for them to listen to. For example, the user can frown at the

radio if they are unhappy with the tune that they are listening to as a cue for it to change to another station.



What you study

This degree focuses on the design of advanced products, services, experiences and systems across the breadth of engineering fields offered at Imperial.

It will enable you to develop a range of fundamental design and engineering skills, with a particular emphasis on creativity, computer-aided engineering tools, optimisation, human factors, design process and the enterprise skills and industrial experience necessary to launch brand new products to market.

The course contains a substantial number of project and coursework modules of increasing scale throughout the programme. You will incrementally combine

your engineering and design skills with business knowledge in successive projects. This will culminate in an Enterprise Roll Out module in the final year in which you will manage the launch to market of one of the products you have made during an in-course project.

All first and second year modules are compulsory and we focus particularly on foundational engineering, computing, mathematics and human factors to give you a solid scientific and design basis on which to build. These cover such subjects as mechanics, electronics for product and system design, computing, and mechatronics and robotics.

The third and fourth years include a greater emphasis on advanced modules in design and engineering, and enterprise and entrepreneurship skills. You will have a choice of optional modules, in areas such as design rationale, human factors

and advanced engineering tools, allowing you to specialise in areas of interest. It may also be possible to take optional modules from other engineering degrees at Imperial.

INDUSTRIAL PLACEMENT

All students will undertake a six-month industrial placement from April in the third year. The placement will be on-site with an industrial partner and supervised jointly by the partner and Imperial.

A substantial number of companies have already expressed an interest in hosting placements and it is expected that you will have choice from a variety of partners and projects for your placement.

FIND OUT MORE



Full course information
www.imperial.ac.uk/study/ug/design-engineering

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DEPARTMENT OF

Earth Science and Engineering

The understanding of how our planet works from the Earth's internal core to its crust, including the oceans and atmosphere

80

→ Total expected intake

4.0:1

→ Applications: admissions ratio (for 2013 entry)

13.0:1

→ Student: staff ratio (2013–14)

The Department

The principal challenge facing the world's growing population is how to maintain sustainable access to the natural resources – water, energy and food – that are necessary for us to enjoy a good quality of life, while protecting the environment. The science and engineering behind understanding and solving this challenge lie at the heart of earth science, an interdisciplinary subject which encompasses physics, chemistry, engineering and mathematics.

Our small and friendly Department brings together specialists in geology, geophysics, mineral and energy resources, earth engineering, environmental science, and computational modelling. Based within the Royal School of Mines building, we have excellent teaching and learning resources, including an international online database of rocks and minerals (the Rock Library) and industry-standard geology and geophysics software packages.

Our location gives us unique access to one of the finest fossil and mineral collections in the world, hosted at the Natural History Museum, just minutes away from the South Kensington Campus. Museum staff, who are world experts in geochemistry, mineralogy, mineral resources and palaeontology, also contribute to our teaching.

Undergraduate students being taught by Professor Sanjeev Gupta, looking at wave and sand movement in the module Surface Processes

OUR DEGREES

QUALIFICATION AND PROGRAMME TITLE	UCAS CODE	ECTS CREDITS*	LENGTH
BSc Geology	F600	180	3 years
MSci Geology	F640	270	4 years
MSci Geology with a Year Abroad	F601	270	4 years
MSci Geology and Geophysics	F661	270	4 years
BSc Geophysics	F662	180	3 years
MSci Geophysics	F660	270	4 years
MSci Geophysics with a Year Abroad	F664	270	4 years
MSci Petroleum Geoscience	F663	270	4 years

* For more information about ECTS credits see page 130.

PROFESSIONAL ACCREDITATION

These degrees are professionally accredited by the Geological Society – see page 9. They also lead to the award of the Associateship of the Royal School of Mines (ARSM) – see page 130.

ENTRY REQUIREMENTS

A-LEVEL GRADES

AAA overall, to include two of the following: Mathematics, Physics, Chemistry, Geology, Biology and Geography

Geophysics only
Both Mathematics and Physics must be offered at Grade A at A-level.

IB SCORES

38 points overall, to include:

6 Higher level in two subjects (see A-level list above)

Geophysics only
Both Mathematics and Physics must be offered at Grade 6 at higher level.

ADDITIONAL CRITERIA

- ✓ Interview – candidates who demonstrate potential on their UCAS form
- ✗ Admissions test

A minimum standard of English language applies for all applicants – see page 62 for details.

These are the minimum entry requirements for the Department – actual entry requirements may vary. For Year Abroad degrees an additional language qualification may be required.

For more information see: www.imperial.ac.uk/study/ug/earth-science

What our graduates do

The growing importance of earth science and engineering in tackling some of the world's most significant challenges means that the job prospects for our graduates have never been better.

Our three-year BSc degrees are excellent preparation for careers in geosciences and other professions, especially if followed by a relevant MSc and a research degree. Our four-year MSc degrees provide a deeper understanding of the subject and the chance to undertake a significant research project. MSc graduates also require fewer years of work experience to apply for Chartership of the Geological Society.

Recent graduates of the Department have become...

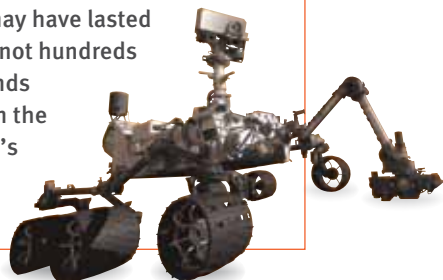
- 1 Environmental scientist, AMEC
- 2 Geologist, Midland Valley
- 3 Geologist, BP
- 4 Geophysicist, CGG
- 5 Junior exploration geologist, Treliver Minerals



DID YOU KNOW?

Professor Sanjeev Gupta and his colleagues from NASA have found evidence that there was once an ancient lake on Mars that may have been able to support life.

The scientists believe that the lake may have lasted for tens if not hundreds of thousands of years on the red planet's surface.



What you study

All students study similar topics in years one and two, giving you the flexibility to change between our degrees until mid-way through your second year. Year one covers the broad fundamentals of the geosciences through modules including Earth Processes, Mathematical Methods, Field Geology and Structural Geology, and culminating in a two-week field trip to Spain.

Year two is designed to deepen your knowledge of the geosciences with modules in geochemistry and geophysics alongside sedimentary processes, palaeontology, igneous and metamorphic processes, and earth resources. This is complemented by further field trips, currently to the Pyrenees and Scotland. Geophysics students take additional mathematical classes, and study numerical methods through advanced programming. There is also a field trip, currently to Morocco.

In years three and four you specialise according to your chosen degree (see below) and will participate in further field trips, take core and optional modules, and complete an independent field study and research project linked to your chosen degree title.

GEOLOGY

Geology is the study of the Earth and how its interior, surface and atmosphere interact. Geologists study the world through observation and make inferences based on understanding of fundamental scientific principles. We use fieldwork to help you gain experience in

identifying rocks and interpreting the physical (including tectonic) processes that may have been involved in their formation. Specialist modules also include paleobiology, paleo-oceanography, igneous, metamorphic, basin analysis, hydrothermal, and ore-forming processes.

GEOPHYSICS

These degrees are designed for students with a specific interest in mathematics or physics and the application of physical laws to the study of the Earth. While you share some core modules with other degrees, we place greater emphasis on mathematics and physics subjects and modelling techniques. You will also gain experience with technical equipment and specialist software.

PETROLEUM GEOSCIENCE

Petroleum geoscience uses a fundamental understanding of the Earth and its past to find and responsibly exploit petroleum resources, with minimal environmental impact. This makes it key to the world's energy future. Specialist modules include basin analysis, and advanced clastic and carbonate sedimentology.



Our Rock Library contains detailed descriptions of the mineralogies, textures and petrology of a large number of rock samples, as well as rock identification tools and learning resources to help students improve their skills in practical sample identification and interpretation.



YEAR ABROAD DEGREES

Year three placements are available in the USA, Canada or Australia, or via the Erasmus scheme in France, Spain or the Netherlands. While abroad, you study assessed modules, with grades achieved abroad counting directly towards your Imperial degree. Tuition is in English except in France and Spain where proficiency in the relevant language is required before you go – language preparation is available at the College (see page 10). Selection is competitive due to limited places and is normally only available to students who achieve a first class degree by the end of year two.

FIND OUT MORE



Full course information
www.imperial.ac.uk/study/ug/earth-science

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DEPARTMENT OF

Electrical and Electronic Engineering

The design and application of large and small scale electronic systems to transmit energy and information

The Department

Electrical and electronic engineering impacts upon almost every area of our lives, including communications, commerce, entertainment, manufacturing, healthcare, transport, energy and the environment. Electrical and electronic engineers are at the forefront of the challenge to use technology to make things faster, better, cheaper and more sustainable, and to make our lives more healthy, productive and enjoyable.

Imperial's Department of Electrical and Electronic Engineering has a long and proud history as one of the foremost centres for research and teaching both in the UK and worldwide; and it's a great place to work and learn. Our reputation is built through our world class academics and researchers, dedicated support staff, strong relationships with a wide range of industries, and our diverse and talented student community.

Our specialist modules are always evolving to take advantage of new technologies and our research discoveries. The result is that fourth year students can choose from over 45 advanced options such as human-centred robotics, speech processing and sustainable energy. MEng students also have chance to gain hands-on experience of engineering in action with the option of a six-month placement during their third year.

160

→ Total expected intake

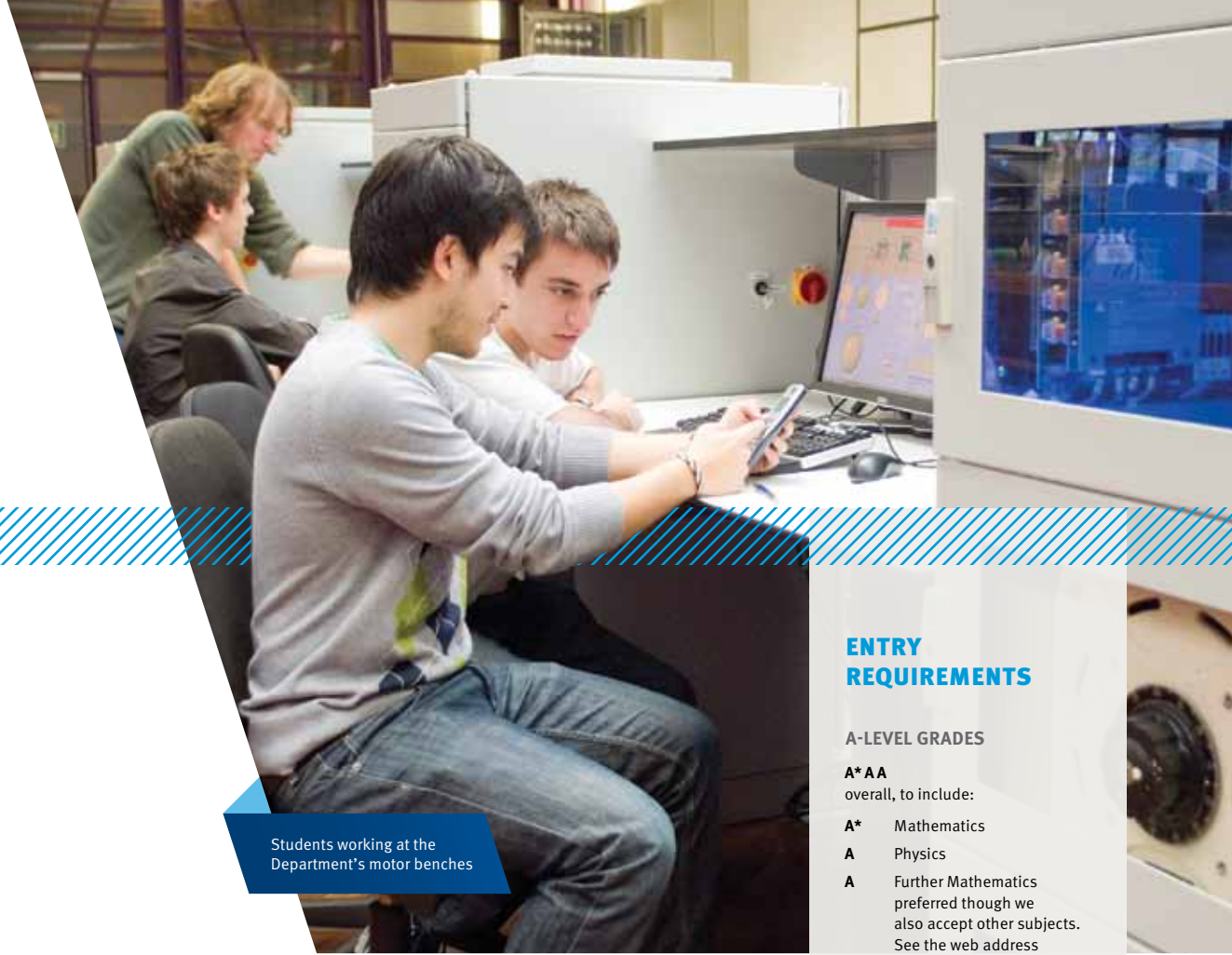
Electrical and Electronic Engineering: 125
Electronic and Information Engineering: 35

5.2:1

→ Applications: admissions ratio (for 2013 entry)

17.9:1

→ Student: staff ratio (2013–14)



Students working at the Department's motor benches

ENTRY REQUIREMENTS

A-LEVEL GRADES

A* AA overall, to include:
A* Mathematics
A Physics
A Further Mathematics preferred though we also accept other subjects. See the web address below for details.

IB SCORES

38 points overall, to include:
6 Mathematics at higher level
6 Physics at higher level

ADDITIONAL CRITERIA

- ✓ Interview – candidates who demonstrate potential on their UCAS form
- ✗ Admissions test

A minimum standard of English language applies for all applicants – see page 62 for details.

These are the minimum entry requirements for the Department – actual entry requirements may vary. For Year Abroad degrees an additional language qualification may be required.

For more information see: www.imperial.ac.uk/study/ug/electrical-engineering

OUR DEGREES

QUALIFICATION AND PROGRAMME TITLE	UCAS CODE	ECTS CREDITS*	LENGTH
BEng Electrical and Electronic Engineering ●	H600	180	3 years
MEng Electrical and Electronic Engineering ●	H604	246/270 [†]	4 years
MEng Electrical and Electronic Engineering with Management ●	H6N2	246/270 [†]	4 years
MEng Electrical and Electronic Engineering with a Year Abroad ●	H601	246/270 [†]	4 years
BEng Electronic and Information Engineering ●	HG65	180	3 years
MEng Electronic and Information Engineering ●	GH56	246/270 [†]	4 years
MEng Electronic and Information Engineering with a Year Abroad ●	HG6M	246/270 [†]	4 years

* For more information about ECTS credits see page 130.

† The MEng with the third year integrated industrial placement option leads to the award of 270 ECTS credits.

PROFESSIONAL ACCREDITATION

These degrees are accredited by the Institution of Engineering and Technology (IET) – see page 9. Imperial College London is a member of the IET's Power Academy and the UK Electronic Skills Foundation (UKESF), both of which support Home students through scholarships. These degrees also lead to the award of the Associateship of the City and Guilds of London Institute (ACGI) – see page 130.

What you study

ELECTRICAL AND ELECTRONIC ENGINEERING

Years one and two cover a core programme covering the fundamentals of electrical and electronic engineering in areas such as analogue and digital electronics, software engineering, circuit analysis, semiconductor devices, and mathematics. In years three and four you can choose mainly technical modules in specialist areas such as energy systems, communications or computing, alongside a small number of non-technical and business options. Alternatively you can reduce the number of technical modules and choose a substantial management component, delivered by Imperial College Business School. There is also a study abroad option (see below).

All MEng students choose between a six-month industrial placement or group design project in the third year, and undertake a substantial individual project in their final year.

ELECTRONIC AND INFORMATION ENGINEERING

These degrees provide an understanding of the entire stack of modern networked computers, from the design and architecture of the CPU in a smartphone, to the information theory and wireless protocols connecting it to the internet, and on to the operating systems and databases providing back-end support in the cloud.



↑ Dr Pantelis Georgiou has developed a bio-inspired artificial pancreas, which aims to improve the treatment of patients suffering from Type 1 diabetes.

The course covers the technical knowledge and practical skills of both computing and electrical engineering, while also providing a 'big picture' view of how it all connects, preparing you for a career in cutting-edge technology in industry or research. You study core modules in years one and two, and begin to specialise in year three, choosing advanced subjects from within the Department and from the Department of Computing. MEng students can choose between a six-month industrial placement or group design project in year three, as well as undertaking a substantial individual project in their final year.

YEAR ABROAD DEGREES

MEng students have the chance to spend their final year studying at a university in Singapore or the USA, or via the Erasmus scheme in France, Germany, Italy, Belgium, Switzerland, the Netherlands or Sweden. While abroad, you complete a substantial technical project, a dissertation and take lecture modules equivalent to Imperial's fourth year with grades achieved counting towards your Imperial degree.

An acceptable proficiency in the relevant language is required for France, Italy, Germany and Switzerland and language classes are available to help you prepare (see page 10).

Selection for Year Abroad placements is competitive due to limited places in some countries so this opportunity is ordinarily only available to students who are on target to achieve at least a 2.1 by the end of year three.



Second year students learning how to properly set a scope and use it to analyse a signal in the Mixed-Mode signal processing experiment. This experiment consists of the design and realisation of an active filter and amplifier involving the management of unwanted digital noise over analogue signals.

What our graduates do

Our graduates are highly sought after worldwide for a wide range of careers in fields such as electrical energy, circuit design, computer gaming, software development, image processing, technical consultancy, academic research, telecommunications, finance and management.

Recent graduates of the Department have become...

- 1 Cyber security consultant, BAE Systems Detica
- 2 Fixed income strategist, Goldman Sachs
- 3 Site reliability engineer, Google
- 4 iPlayer developer, BBC
- 5 Graduate engineer, BBOX



DID YOU KNOW?

As an Imperial student you will have the chance to volunteer for the social enterprise project e.quinox. Set up in 2008 by second year students working on a group project, e.quinox works by providing rural communities in developing countries with portable battery boxes from a kiosk, where they are charged up using solar energy. Money made from hiring out the batteries is channelled back into maintaining and developing the kiosk.

FIND OUT MORE



Full course information
www.imperial.ac.uk/study/ug/electrical-engineering

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DEPARTMENT OF

Life Sciences

[Biological Sciences, Biochemistry, Biotechnology]

The study of living things and how they react to each other and the world around them

280

→ Total expected intake

Biological Sciences: 140
Biochemistry/Biotechnology: 140

5.8:1

→ Applications: admissions ratio (for 2013 entry)

12.6:1

→ Student: staff ratio (2013–14)

The Department

Imperial's Department of Life Sciences is one of the largest such departments in Europe, with over £100 million worth of current funding supporting world class research projects. Research within the Department is grouped around themes that currently include molecular mechanisms of disease, evolutionary biology, infection and immunity, and molecular plant and microbial biology.

We are also involved in major cross-College initiatives in bioenergy, synthetic biology, infectious disease and climate change, and have cross-institution links with the Natural History Museum, the Royal Botanic Gardens at Kew, and the Diamond Light Source, the UK's national synchrotron science facility.

Our outstanding facilities for teaching and research include sophisticated equipment for biological mass spectrometry and nuclear magnetic resonance studies, facilities for genomic and cell biology studies, the most modern microscopes, and tissue culture suites. Our partnerships with industry, other institutions overseas, and other departments at Imperial mean that we are able to offer many opportunities for overseas study, a year in industry or research, and interdisciplinary studies such as management or learning a language as part of your degree.

Mosquitoes, which are primarily responsible for transmitting malaria, are bred and stored for research purposes at a tropical 80% humidity and 28°C in our labs on campus.

BIOLOGICAL SCIENCES DEGREES

QUALIFICATION AND PROGRAMME TITLE	UCAS CODE	ECTS CREDITS*	LENGTH
BSc Biological Sciences	C100	180	3 years
BSc Biological Sciences with Management	C1N2	180	3 years
BSc Biological Sciences with Management	C1NG	240	4 years
BSc Biological Sciences with French for Science	C1R1	270	4 years
BSc Biological Sciences with German for Science	C1R2	270	4 years
BSc Biological Sciences with Spanish for Science	C1R4	270	4 years
BSc Biological Sciences with Management and a Year in Industry/Research	C1NF	240	4 years
BSc Biological Sciences with Management and a Year in Industry/Research	C1NA	300	5 years
BSc Biological Sciences with Research Abroad	C102	240	4 years
BSc Biological Sciences with a Year in Industry/Research	C110	240	4 years
BSc Ecology and Environmental Biology	C180	180	3 years
BSc Microbiology	C500	180	3 years

* For more information about ECTS credits see page 130.

All of our degrees lead to the additional award of the Associateship of the Royal College of Science (ARCS) – see page 130.

ENTRY REQUIREMENTS

A-LEVEL GRADES

AAA overall, to include:

- A** Biology
- A** Physics, Chemistry or Mathematics
- A** in an additional subject (excluding Critical Thinking or General Studies)

IB SCORES

38 points overall, to include:

- 6** Biology at higher level
- 6** Physics, Chemistry or Mathematics at higher level

ADDITIONAL CRITERIA

- ✗** Interview or admissions test
- ✓** Grade B at GCSE (or equivalent) in Chemistry and Biology (or Combined Science), and Mathematics

For Year Abroad and Language for Science degrees an additional language qualification is required.

A minimum standard of English language applies for all applicants – see page 62 for details.

These are the minimum entry requirements for the Department – actual entry requirements may vary.

For more information see: www.imperial.ac.uk/study/ug/life-sciences

WHAT CAN YOU STUDY?

A biochemistry student working with photosynthetic bacteria, cyanobacteria, which live in water

BIOCHEMISTRY AND BIOTECHNOLOGY DEGREES

QUALIFICATION AND PROGRAMME TITLE	UCAS CODE	ECTS CREDITS*	LENGTH
BSc Biochemistry	C700	180	3 years
BSc Biochemistry with Management	C7N2	180	3 years
BSc Biochemistry with Management	C7NG	240	4 years
BSc Biochemistry with Management and a Year in Industry/Research	C7NF	240	4 years
BSc Biochemistry with Management and a Year in Industry/Research	C7NA	300	5 years
BSc Biochemistry with a Year in Industry/Research	C701	240	4 years
BSc Biochemistry with Research Abroad	C702	240	4 years
BSc Biochemistry with French for Science	C7R1	270	4 years
BSc Biochemistry with German for Science	C7R2	270	4 years
BSc Biochemistry with Spanish for Science	C7R4	270	4 years
BSc Biotechnology	J700	180	3 years
BSc Biotechnology with Management	J7N2	240	4 years
BSc Biotechnology with Research Abroad	J701	240	4 years
BSc Biotechnology with a Year in Industry/Research	J702	240	4 years
BSc Biotechnology with Management with a Year in Industry/Research	J7NF	300	5 years
BSc Biotechnology with French for Science	J7R1	270	4 years
BSc Biotechnology with German for Science	J7R2	270	4 years
BSc Biotechnology with Spanish for Science	J7R4	270	4 years

* For more information about ECTS credits see page 130.

All of our degrees lead to the additional award of the Associateship of the Royal College of Science (ARCS) – see page 130.

ENTRY REQUIREMENTS

A-LEVEL GRADES

AAA overall, to include:

- A** Chemistry
- A** in another science subject (Biology is preferred but not mandatory) or Mathematics

IB SCORES

38 points overall, to include:

- 6** Chemistry at higher level
- 6** Biology or Mathematics at higher level

ADDITIONAL CRITERIA

- ✗ Interview or admissions test
- ✓ Grade B at GCSE (or equivalent) in Chemistry and Biology (or Combined Science), and Mathematics

For Year Abroad and Language for Science degrees an additional language qualification is required.

A minimum standard of English language applies for all applicants – see page 62 for details.

These are the minimum entry requirements for the Department – actual entry requirements may vary.

For more information see: www.imperial.ac.uk/study/ug/life-sciences

BIOLOGICAL SCIENCES

The Biological Sciences programme aims to understand the behaviour of living systems from the level of cells up to whole organisms and ecosystems.

Biological Sciences students follow the same core modules for the first year of study: Biological Chemistry and Microbiology, Biology of Organisms, Cell Biology and Genetics, and Ecology and Evolution. In the second year, all students take both Applied Molecular Biology and Genetics; they also continue the statistics and programming training that began in the first year. From the spring of your second year, you begin to specialise. We offer a broad range of optional modules, covering topics such as Developmental Biology, Immunology, Virology, Ecology, Evolutionary Biology and Microbiology.

↓ A student using zebrafish larvae to investigate inflammatory immune responses



Most of the final year modules offered can be taken by students on both the Biological Sciences and the Biochemistry and Biotechnology degree programmes. Biological Sciences students can choose modules from the cell and molecular biology stream (e.g. Neurobiology, Infection and Immunity, Synthetic Biology, Plant Biotechnology and Bioinformatics) or the ecosystem stream (e.g. Biodiversity, Ecology and the Tropical Biology Field course), according to their interests.

BIOCHEMISTRY AND BIOTECHNOLOGY

Biochemistry aims to understand biology with a primary focus on the molecular (protein, DNA) and cellular level. Biotechnology places a further emphasis on understanding how such biochemical knowledge can be applied, e.g. translated into the manufacture of new products such as drugs and diagnostics, or to catalyze the conversion of solar into chemical energy (biofuels).

Biochemistry and Biotechnology students follow the same core modules for the first two years of study before specialising, heading overseas, or spending a year in industry in their third year. Core modules in the first year include Biological Chemistry, Molecular Biology, Cell Biology, and Proteins and Enzymes. In the second year there are four core modules, including Genes and Genomics, Integrative Cell Biology, two modules in Macromolecular Structure and Function, and an optional module to be taken from outside the Biochemistry syllabus (often a humanities or business module).

A wide range of optional modules are available for you to choose from in later years including subjects such as Damage and Repair in Biological Systems, Cancer, Medical Glycobiology, Systems Neuroscience, Synthetic Biology, Symbiosis, Plant Immunity and Disease, and Bioinformatics.



A final year biochemistry student testing whether candidate defence proteins in Arabidopsis plants influence resistance to aphid attack as part of his final research project.

DEGREES WITH MANAGEMENT

Each degree stream offers the opportunity for you to spend a year in Imperial College Business School, gaining an understanding of the management and operating environment of business organisations. The three-year courses (Biological Sciences and Biochemistry only) include two years of science study followed by one year in Imperial College Business School. The four-year courses (all streams) bring the first three years up to the same level as our standard BSc science courses, followed by a year in the Business School. The five-year courses (all streams) include an additional placement year in industry or research on top of the management year.

FRENCH/GERMAN/ SPANISH FOR SCIENCE

Each degree stream includes the opportunity to study French, German or Spanish as a second language as part of the course. As well as the full science curriculum, you will attend language classes in your first, second and fourth years. Your third year is undertaken at a partner university overseas.

YEAR OF RESEARCH ABROAD

These courses offer you the chance to spend your third year studying at an approved institution overseas. Students following these programmes are expected to develop proficiency in the language of their host country before the placement begins and you will receive training in that language to help you prepare.

YEAR IN INDUSTRY/ RESEARCH

These courses offer you the chance to integrate your academic work with a period of practical experience and employment in industry or a research organisation. The 12-month placement takes place between the second and third year of your chosen degree and can be in areas such as the biotechnology or pharmaceutical industries, medical research, ecology, conservation biology, marine biology, food science and agricultural research.



DID YOU KNOW?



Brazil's Atlantic Forest contains the only living examples of nearly 10,000 species of plant and more bird species than all of Europe. It is one of the world's most threatened biodiversity hotspots. Imperial life scientists have demonstrated that Brazil could conserve the forest by investing just 0.01 per cent of its annual GDP.

Transfer between degrees

For our Biological Sciences programme, transfer is possible between degrees in the same stream up to the end of first year. It is also permitted to transfer between the Biochemistry and Biotechnology streams up to the end of the second year as the first two years are shared between all the degrees in both streams.

Transfer to the Language for Science degrees within the same stream must be completed as soon as possible in the first year as language classes start early on in the programme.

FIND OUT MORE



Full course information
www.imperial.ac.uk/study/ug/life-sciences

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What our graduates do

Life sciences graduates enjoy excellent career opportunities. Most of our graduates study for a higher degree in life sciences and many follow careers in the field, particularly in the research and management areas of pharmaceuticals, biotechnology, biomedical science, food technology, agrisciences, and pest, disease and environmental management.

Similar opportunities exist for life scientists in government and independent laboratories involved in medical research, public health, forensic investigation, disease research, conservation, and pollution. Some of our graduates also go on to work in medical careers, become teachers, or even work in the media.

Recent graduates of the Department have become...

BIOLOGICAL SCIENCES

- 1 Clinical data manager, Institute of Cancer Research
- 2 Laboratory assistant, J R Laboratories
- 3 Research assistant, Imperial College Healthcare NHS Trust
- 4 Teacher, Teach First
- 5 Ingredient technologist, United Biscuits

BIOCHEMISTRY AND BIOTECHNOLOGY

- 1 Research officer, A*STAR, Singapore
- 2 Television researcher, BBC
- 3 Fungicide biochemist, Syngenta
- 4 Analyst, Deutsche Bank
- 5 Intern, Singapore Institute for Clinical Sciences

DEPARTMENT OF

Materials

Understanding the relationship between the fundamental structure and properties (mechanical, electrical, optical or magnetic) of matter

105

→ Total expected intake

5.5:1

→ Applications: admissions ratio (for 2013 entry)

14.4:1

→ Student: staff ratio (2013–14)

The Department

Materials science and engineering are critical for innovation in fields such as healthcare, energy, environmental sustainability and transport.

As a materials scientist, you'll be able to take your pick from a wide range of careers in roles as diverse as manufacturing, processing, research, production and management, and in sectors ranging from aerospace to energy. It is an exciting and dynamic field to be a part of, now more so than ever thanks to developments like 'smart materials', nanotechnology and biomimetics.

Imperial has a global reputation for materials science, ranking fourth in the world in the QS World University Rankings by Subject 2014.

You will become part of a department, which is leading in research across a vast range of applications, including nuclear, aerospace, biomedical, automotive and electronics.

Our facilities include cutting-edge equipment and tools for advanced materials imaging and characterisation, and for studying interactions between living cells and biomaterials.

We maintain extensive contacts and relationships with relevant organisations and industry in London and across the world. This provides exciting opportunities for final year projects and industrial placements (a core part of our MEng programmes).

Professor Julian Jones and a biomaterials student discuss the potential uses of bioactive glass in regenerative medicine. Find out more about studying Materials at Imperial:

▶ bit.ly/imperial-why-study-materials

OUR DEGREES

QUALIFICATION AND PROGRAMME TITLE	UCAS CODE	ECTS CREDITS*	LENGTH
BEng Materials Science and Engineering	JF52	180	3 years
BEng Materials with Management	J5N2	180	3 years
MEng Materials Science and Engineering	JFM2	270	4 years
MEng Aerospace Materials	HJ45	270	4 years
MEng Biomaterials and Tissue Engineering	BJ95	270	4 years
MEng Materials with Nuclear Engineering	J5H8	270	4 years

* For more information about ECTS credits see page 130.

PROFESSIONAL ACCREDITATION

These degrees are professionally accredited by IOM3 (The Institute of Materials, Minerals and Mining) – see page 9. They also lead to the award of the Associateship of the Royal School of Mines (ARSM) – see page 130.

ENTRY REQUIREMENTS

A-LEVEL GRADES

A* A A overall, to include:

- A** Mathematics
- A** Physics
- A** Additional subject (Chemistry and Biology are the most common)

The A* can be in any of the three subjects.

IB SCORES

38 points overall, to include:

- 6** Mathematics at higher level
- 6** Physics at higher level

ADDITIONAL CRITERIA

- ✓ Interview – candidates who demonstrate potential on their UCAS form
- ✗ Admissions test

A minimum standard of English language applies for all applicants – see page 62 for details.

For more information see: www.imperial.ac.uk/study/ug/materials

WHAT CAN YOU STUDY?



Imperial scientists helped develop a liquid solution to clean a Dornier Do-17, a German World War II bomber known as the Flying Pencil, to preserve it from corrosion when it was raised from the bottom of the English Channel in June 2013.

What you study

All students follow the same programme for the first two years, providing a strong base of theoretical principles and covering the widest possible range of materials, including: biomaterials, metals and alloys, ceramics, glasses, polymers, composites and semiconductors.

This is reinforced by laboratory work, industrial visits and lectures, as well as tutorials and case studies. From your third year onwards, the course content varies according to your chosen degree. This enables you to specialise according to your interests – see right for details.

All MEng programmes build on the BEng degrees by including a four-month placement between years three and four. Placements can take place in the UK or abroad and will be relevant to your degree specialisation (for example nuclear, aerospace or biomedical). This is followed by a research project, again relevant to your chosen degree.

MATERIALS SCIENCE AND ENGINEERING

This is the broadest of our Materials Science degrees. It gives you the chance, in year three (year four for MEng students), to choose modules from a selection of the subject streams in materials processing, structural materials or electrical materials, as well as from the specialist degrees detailed below.

MATERIALS WITH MANAGEMENT

The final year of this degree includes a broad choice of modules in materials processing, structural materials or electrical materials, as well as in humanities and languages delivered by the Centre for Co-Curricular Studies, and management and economics delivered by Imperial College Business School (see page 10).

AEROSPACE MATERIALS

This degree prepares you to work in the vital role of materials engineer in aerospace. From lighter airframes to more efficient engines the most pressing challenges in the industry require materials solutions. You will focus on the metals and composites that dominate the industry, in combination with modules delivered by the Department of Aeronautics (see page 64).

BIOMATERIALS AND TISSUE ENGINEERING

In the third year of this degree you study cell biology, biocompatibility, and biomaterials for hard tissue restoration. In the final year there are specialist modules in biomaterials for soft tissue restoration, tissue engineering, and artificial organs, as well as a large number of detailed case studies.

MATERIALS WITH NUCLEAR ENGINEERING

Materials are central to the nuclear industry, both in designing reactor parts that are safe under irradiation and in handling and processing waste. This degree combines modules in metals, glasses and ceramics with a focused introduction to nuclear engineering taught by specialists from across Imperial. There is also a nuclear-focused research project.



A second year student discussing optical microscopy of aluminium microstructures with a postgraduate demonstrator



What our graduates do

A degree in Materials Science and Engineering can open the door to careers in a wide variety of sectors from chemicals manufacturing and pharmaceuticals to technical management and scientific research and development (R&D). There are lots of emerging sectors to think about too, such as nanotechnology, biomedical materials, high performance textiles, and composites.

Recent graduates of the Department have become...

- 1 Manufacturing engineer, Jaguar Land Rover
- 2 Design engineer, Mitsubishi Electric Corporation
- 3 R&D engineer, Sensornet
- 4 Research scientist, A*STAR, Singapore
- 5 Materials scientist, Morgan Advanced Materials

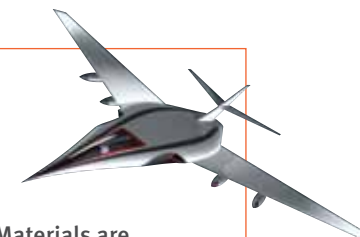
FIND OUT MORE



Full course information
www.imperial.ac.uk/study/ug/materials



DID YOU KNOW?



Researchers in Materials are exploring how ceramics might help new types of aircraft to travel at hypersonic speeds – five times faster than the speed of sound. Such aircraft would leave the Earth's atmosphere during flight and then experience extreme temperatures on re-entry. The researchers have identified a ceramic that could help shield the aircraft, which can withstand temperatures three times hotter than lava.

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DEPARTMENT OF

Mathematics

The study of abstractions, patterns and relationships – a language and a tool for examining and understanding quantity, shape, structure, space and change

250

→ Total expected intake

7.7:1

→ Applications: admissions ratio (for 2013 entry)

14.8:1

→ Student: staff ratio (2013–14)

The Department

Mathematics is the engine of science and engineering. It is the set of ideas, insights and techniques that enable us to understand, analyse and solve problems. It also has an elegance and beauty that fascinates and inspires those who understand it.

We offer a range of mathematics degrees that will develop both your knowledge and your creativity, built around our research expertise in four core areas: Pure Mathematics, Applied Mathematics and Mathematical Physics, Mathematical Finance, and Statistics.

The high quality of the staff in the Department of Mathematics is demonstrated by the number of prizes won by our academic staff and the quality of our graduates. We are home to several Fellows of the Royal Society, all of whom are active in teaching and research within the Department. One of our professors, Professor Sir Simon Donaldson, was knighted in 2012 for services to mathematics, having also previously won the prestigious Fields Medal and the Shaw Prize for Mathematics.

We hold open days several times a year where you can hear talks about the courses and other activities of the Department and the College. Current students lead tours of facilities including our Mathematics Learning Centre for independent and group study. You will also have many opportunities to find out more about us and ask questions.

Undergraduate student Yang in a Scientific Modelling tutorial session with Dr Dan Moore, in which students use the programming language C to carry out various tasks

OUR DEGREES

QUALIFICATION AND PROGRAMME TITLE	UCAS CODE	ECTS CREDITS*	LENGTH
BSc Mathematics	G100	180	3 years
BSc Mathematics, Optimisation and Statistics	GG31	180	3 years
BSc Mathematics (Pure Mathematics)	G125	180	3 years
BSc Mathematics with Applied Mathematics/ Mathematical Physics	G1F3	180	3 years
BSc Mathematics with Mathematical Computation	G102	180	3 years
BSc Mathematics with Statistics	G1G3	180	3 years
BSc Mathematics with Statistics for Finance	G1GH	180	3 years
MSci Mathematics	G103	240/270 [†]	4 years
MSci Mathematics with a Year in Europe	G104	240/270 [†]	4 years
BEng Mathematics and Computer Science [‡]	GG14	180	3 years
MEng Mathematics and Computer Science [‡]	GG41	270	4 years
MEng Mathematics and Computer Science (Pure Maths and Computational Logic) [‡]	IG11	270	4 years
MEng Mathematics and Computer Science (Computational Statistics) [‡]	GI43	270	4 years

* For more information about ECTS credits see page 130.

† The standard MSci programme lasts four academic years and carries 240 ECTS credits.

‡ See the Department of Computing on page 84 for entry requirements.

PROFESSIONAL ACCREDITATION

The Institute and Faculty of Actuaries accredits three of our statistics modules, offering exemptions from some professional actuarial exams. Actuaries are experts in risk management. CT 3 exemption is gained by obtaining a 2.1 grade or above in the following modules: M1S Probability and Statistics and M2S2 Statistical Modelling I; for CT 4 exemption the above standard is applied in the M3S14/M4S14/M5S14 Survival Models and Actuarial Applications module.

ENTRY REQUIREMENTS

These entry requirements apply to Mathematics degrees only.

A-LEVEL GRADES

A* A* A overall, to include:
A* Mathematics
A* Further Mathematics
A Third subject – Chemistry or Physics an advantage

IB SCORES

39 points overall, to include:
7 Mathematics at higher level
6 Physics, Chemistry or Economics at higher level

ADDITIONAL CRITERIA

- ✓ Interview – for the majority of applicants.
- ✓ Admissions test – Mathematics Admissions Test (MAT) or Sixth Term Examination Paper (STEP). Without MAT, conditional offers will include STEP II or III.

A minimum standard of English language applies for all applicants – see page 62 for details.

These are the minimum entry requirements for the Department – actual entry requirements may vary. For Year Abroad degrees an additional language qualification may be required.

For more information see: www.imperial.ac.uk/study/ug/mathematics

WHAT CAN YOU STUDY?



Professor Alexander Ivanov lecturing on combinatorial objects using algebraic methods.

YEAR IN EUROPE DEGREES

Imperial's Department of Mathematics is one of only a few such departments in the UK to commit itself to offering a year in Europe as an integral part of your MSci degree. This provides the opportunity for you to challenge yourself in a different academic and cultural environment.

The year abroad takes place in year three and opportunities are currently available at leading universities in France, Germany, Spain and Switzerland via the Erasmus scheme. You will normally be taught in the language of the host country so an acceptable proficiency in the appropriate language is required by the end of year two – language preparation is available at Imperial (see page 10).

Selection for Year in Europe placements, some of which are competitive due to limited places, takes place in year two and is ordinarily only available to students who are on track to achieve at least a 2.1 by the end of this year.

JOINT MATHEMATICS AND COMPUTER SCIENCE (JMC) DEGREES

See the Department of Computing on page 84.

What you study

Some topics in university-level mathematics are a direct continuation of those at A-level, but others will introduce you to new ways of thinking. These topics are concerned with the logical structure of arguments, the proper definition of mathematical objects, the design of sophisticated mathematical models, and the legitimacy of computations.

All students follow broadly the same programme of study for the first two years, providing a firm foundation in areas essential to further study including: algebra, analysis, mechanics, probability and statistics, complex analysis, differential equations, multivariable calculus, and orthogonality.

A key feature of the third and fourth years is flexibility. Some students remain broad in their interests, while others prefer to specialise in areas such as statistics and mathematical computation – see degree list on page 113.

You can choose from a wide range of options in areas including pure mathematics, mathematical physics, applied mathematics, mathematical methods, numerical analysis and statistics, as well as business or humanities modules. You will also work on individual and group projects throughout your degree.



DID YOU KNOW?

How some plant species evolved super-efficient photosynthesis had been a mystery. Now, Imperial mathematicians have identified what evolutionary changes led to this special ability. A new study has traced back the history of all the plants that use advanced photosynthesis, including maize, sugar cane and millet, to find out how they evolved the same ability independently, despite not being directly related to one another.



What our graduates do

The logical and analytical skills developed through a degree in mathematics are highly valued by a wide range of employers. Our graduates go on to a wide range of careers in industry, government and education, as well as international banking, computing, business, law, and accountancy.

The MSci programmes in particular prepare you for research careers and are recognised throughout the European Union, where four-year undergraduate degrees tend to be the norm.

Recent graduates of the Department have become...

- 1 Accountant, Towers Watson
- 2 Credit trader, UBS
- 3 Financial software developer, Bloomberg
- 4 Risk analyst, H2O Asset Management
- 5 Teacher, top UK secondary school

FIND OUT MORE



Full course information
www.imperial.ac.uk/study/ug/mathematics

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DEPARTMENT OF

Mechanical Engineering

The study of the design, development, operation and manufacture of new machines, devices and mechanical processes

The Department

Imperial's Department of Mechanical Engineering is a large department with a consistent record for excellent teaching and research. Our academic staff specialise in a range of areas including computational mechanics, sustainable energy technology, food technology, nuclear engineering, nanomaterials and medical engineering.

Whilst traditional undergraduate engineering courses are lecture-based and orientated towards acquiring knowledge, ours emphasise the development of skills needed by the twenty-first century graduate engineer: imagination, creativity, intellectual agility and the ability to work in multidisciplinary teams.

We are consistently ranked as the top UK department for world leading research in this field, and our intensive engagement with industry ensures that our courses remain relevant to the profession.

In addition, our facilities and equipment match those used in industry. A well equipped student workshop and the IDEAs Lab – a dedicated space for project work – provide the wide range of facilities required to represent modern manufacturing. Laboratory facilities range from Instron machines for testing the strength of engineering materials to microcontroller kits for testing the performance of mechatronic systems.



Fourth year students working on the 2011 bio-ethanol race vehicle for the FS 2012 Silverstone event. The race vehicle was built and designed by the College's alternative energy Formula Student race team, Imperial Racing Green. See one of our past teams in action:

bit.ly/imperial-formula-student

ENTRY REQUIREMENTS

A-LEVEL GRADES

A* A* A or **A* AAA** overall, to include:

- A*** Mathematics
- A*/A** Physics
- A** one or two of the following: Biology, Chemistry, Computing, Design Technology, Economics, Electronics, Further Mathematics, Art and Design (4th A-Level only), French or German (H304 only)

IB SCORES

40 points overall, to include:

- 6** Mathematics at higher level
- 6** Physics at higher level

A further subject at higher level is required in one of the following: Biology, Chemistry, Computer Science, Design Technology, or Economics

ADDITIONAL CRITERIA

- ✓ Interview – Home/EU resident applicants
- ✗ Admissions test

A minimum standard of English language applies for all applicants – see page 62 for details.

These are the minimum entry requirements for the Department – actual entry requirements may vary. For Year Abroad degrees an additional language qualification may be required.

For more information see: www.imperial.ac.uk/study/ug/mechanical-engineering

160

→ Total expected intake

8.5:1

→ Applications: admissions ratio (for 2013 entry)

18.7:1

→ Student: staff ratio (2013–14)

OUR DEGREES

QUALIFICATION AND PROGRAMME TITLE	UCAS CODE	ECTS CREDITS*	LENGTH
MEng Mechanical Engineering ●	H301	240	4 years
MEng Mechanical Engineering with a Year Abroad ●	H304	240	4 years
MEng Mechanical with Nuclear Engineering ●	n/a†	240	4 years

* For more information about ECTS credits see page 130.

† Apply initially for MEng Mechanical Engineering (H301).

PROFESSIONAL ACCREDITATION

These degrees are accredited by the Institution of Mechanical Engineers (IMechE) – see page 9. They also lead to the award of the Associateship of the City and Guilds of London Institute (ACGI) – see page 130.

What you study

All students spend the first two years following the same core programme, which provides the fundamental knowledge and intellectual and practical skills that are required by all mechanical engineers. This includes developing your skills in workshop practice, and conducting your own 'design, make and test' projects in both years. The subjects studied include Computing, Fluid Mechanics, Heat Transfer, Materials, Mathematics, Mechanics, Thermodynamics, Stress Analysis, Technical Presentation Skills, and Management and Business for Engineers.

In year three you complete the core programme with two further modules (Machine System Dynamics, Thermodynamics and Energy), a literature survey project, and a major group 'design, make and test' project. You also select optional modules from a wide range of both technical and non-technical subjects.

In year four you select a substantial individual project and choose further optional modules which are taught at Master's level. These vary from year to year but may include subjects such as Design, Art and Creativity; Manufacturing Technology and Management; Aircraft Engine Technology; Combustion; and Vehicle Propulsion Technology. You also have the freedom to choose specialist modules from other engineering departments at Imperial, in areas such as Biomaterials, Computer Assisted and Rehabilitative Devices or Sustainable Electrical Systems, as well as a language or a humanities subject such as history or philosophy through Imperial Horizons (see page 10).



First year students learning the intricacies of technical and perspective drawing



DID YOU KNOW?



A student team have developed 3D food printing technology that squirts out food paste, layer upon layer, to create a pizza, which is then cooked by the device. This is one of the first 3D printers developed at Imperial that both prints and cooks food. This concept has the potential to revolutionise the way meals are created, especially in environments such as space stations or submarines, where it is difficult to store food.

MECHANICAL WITH NUCLEAR ENGINEERING

It's possible to graduate with a specialist MEng Mechanical with Nuclear Engineering degree if the optional modules you complete in the third year include both Introduction to Nuclear Energy and Nuclear Chemical Engineering, and in the fourth year include Nuclear Materials, Nuclear Thermal Hydraulics and Nuclear Reactor Physics.

Three of these five modules are taught by the Departments of Chemical Engineering (page 72) and Materials (page 108). You should apply initially for MEng Mechanical Engineering (H301) and transfer at the end of the second year.



Fourth year student Patricia investigating the insertion forces of surgical needles on an agar brain phantom

YEAR ABROAD DEGREE

Year Abroad students spend their fourth year studying at a leading university in Australia, Singapore or the USA, or via the Erasmus scheme in France, Germany, Switzerland or the Netherlands. While abroad, you will undertake a combination of classes and a project, which in France may be undertaken in industry, with grades achieved counting towards your Imperial degree. In France, Germany and Switzerland, teaching is in the host language so an acceptable proficiency is required – language classes are available to help you prepare. Limited places means competition for some placements is strong so only students who are on track for a 2.1 degree or better by the time of selection in year three will be eligible.

FIND OUT MORE



Full course information
www.imperial.ac.uk/study/ug/mechanical-engineering

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What our graduates do

Our close industry links ensure that many graduates leave Imperial with jobs already lined up. Career opportunities include research and development, design, production, and plant management. Several of our graduates work in Formula One or related industries, and the opportunity to specialise in nuclear engineering prepares students for employment in an industry now poised for expansion.

Recent graduates of the Department have become...

- 1 Engineer intern, Aston Martin
- 2 Systems engineer, BAE Systems
- 3 Diesel powertrain after treatment engineer, Jaguar Land Rover
- 4 Drilling engineer, BP
- 5 Business analyst, Viagogo

WHAT CAN YOU STUDY?

SCHOOL OF

Medicine

[Medicine, Biomedical Science]

The science of understanding, diagnosing, preventing and curing illness and damage to the human body and mind

392

→ Total expected intake

Medicine: 322
Biomedical Science: 70

8.9:1

→ Overall applications: admissions ratio
(for 2013 entry)

MBBS/BSc: 7.9:1
Biomedical Science: 8.9:1

7.2:1

→ Student: staff ratio (2013–14)

The School

Imperial's School of Medicine is responsible for undergraduate teaching within the Faculty of Medicine. The Faculty is one of the largest in Europe, with six campuses across north and west London. We have excellent links to, and partnerships with, a wide range of National Health Service (NHS) Trusts, hospitals and clinics both in and outside of London. This access to a very large and diverse patient population enables our students to gain clinical experience from the very start of their studies.

Our teaching is underpinned by clinical expertise and internationally competitive research. It also draws on a wide range of teaching from colleagues within the Faculty of Medicine and in other departments at Imperial. This ensures that our graduates have the fullest opportunity to gain the scientific knowledge, clinical skills, professional attitude and personal values required for the care of patients in the NHS, and for research.

Developing key skills in areas such as communication, medical ethics and law, and information technology is a core part of the student experience.

You can find out more about Medicine at Imperial at our Medicine open day. See page 137 for details.



MEDICINE DEGREES

QUALIFICATION AND PROGRAMME TITLE	UCAS CODE	LENGTH
MBBS/BSc Medicine ●	A100	6 years
MBBS Graduate Medicine ●	A109	5 years
MBBS/PhD Medicine ●	n/a†	8/9 years
MBBS Medicine ● (delivered at Lee Kong Chian School of Medicine, Singapore)	–	5 years

† Apply initially for A100 (MBBS/BSc) or Graduate Medicine.

Please note: successful applicants for Medicine will need to undergo health assessments and a Disclosure and Barring Service (DBS) check before their place can be confirmed – for details see: www.imperial.ac.uk/study/ug/medicine

The admissions process for the MBBS delivered at LKCMedicine will vary. Applicants to this programme must meet the criteria specified at: www.lkcmmedicine.ntu.edu.sg

Applications for LKCMedicine should be made via NTU's online application portal between October 2015 and April 2016: admissions.ntu.edu.sg

● PROFESSIONAL ACCREDITATION

All MBBS degrees based at Imperial College London are professionally accredited by the General Medical Council (GMC). The MBBS degree at LKCMedicine is accredited by the Singapore Medical Council. Additionally, all MBBS and Biomedical Science degrees delivered at Imperial College London lead to the award of the Associateship of Imperial College School of Medicine (AICSM).

As a School, we are fully committed, both individually and collectively, to upholding the principles and values enshrined in the NHS Constitution and to selecting future doctors who will adhere to them. You can download a PDF copy of the Constitution at bit.ly/nhs-constitution

ENTRY REQUIREMENTS

A/AS-LEVEL GRADES (A100 only)

AAA + AS-level at Grade B overall, to be achieved in the same sitting and to include:

- A** Chemistry and/or Biology
- A** either a science or mathematics subject
- A** see website for guidance
- B** at AS-level or above (this must be in Biology or Chemistry if only one is offered at A-level)

The AS requirement is under review; for the latest information see the web address below.

IB SCORES (A100 only)

38 points overall, to include:

- 6** Chemistry and/or Biology at higher level
- If you only have either Biology or Chemistry at standard level, you must have one other science or mathematical subject at higher level.

GCSE (or equivalent) (A100 only)

AAABB to include:
English Language, Mathematics and Science

GRADUATE MBBS (A109)

2.1 BSc or PhD in a biological subject

ADDITIONAL CRITERIA (all applicants)

- ✓ Admissions test – BMAT is required
- ✓ Interview – candidates who demonstrate potential on their UCAS form

A minimum standard of English language applies for all applicants – see page 62 for details.

These are the minimum entry requirements for the Department – actual entry requirements may vary.

For more information see:
www.imperial.ac.uk/study/ug/medicine

What you study

We offer three routes to achieving the MBBS qualification. MBBS graduates are entitled to provisional registration with the General Medical Council (GMC) with a licence to practise, subject to demonstrating that their fitness to practise is not impaired.

MBBS/BSc MEDICINE

This degree is designed for those who do not yet have a first degree in a biological science subject, and leads to the award of both a BSc and an MBBS. The course is delivered through a combination of classroom-based study and practical – including clinical – experience.

Over the course of the programme you will gain clinical experience at many of our partner NHS Trusts, which are carefully selected to give you a broad and balanced clinical learning experience. Years one and two focus on the scientific basis of medicine and the foundations of clinical practice including early clinical experience.

Year three consists of three 10-week clinical attachments, which may be at any of the hospitals associated with Imperial (see page 39). You spend year four working towards the BSc by undertaking a series of modules and a supervised research project or a specialist course in an area of particular scientific or medical interest. Year five includes a dedicated pathology course followed by six clinical specialties. Year six includes a range of clinical attachments, professional work experience, courses, specialised study modules and an elective period.

GRADUATE MBBS MEDICINE

For those who already have at least a 2.1 in an appropriate biological science degree, there is an option to achieve the MBBS qualification in five years through the graduate programme. The first two years focus on science and foundation clinical skills.

Tailored opportunities to pursue research and scholarship will also be provided. Years 3–5 follow years 3, 5 and 6 of the six-year programme. You will be exempted from the BSc Honours year from the MBBS/BSc programme.

MBBS/PhD MEDICINE

Exceptional students on either of the above MBBS programmes may be offered the opportunity to include a PhD as part of their course. This consists of three years' research, taken either after completion of the BSc for those following the six-year MBBS programme or after the second year of the Graduate programme. After the three years of research are complete, you will resume the rest of the MBBS programme, graduating with both an MBBS and a PhD qualification.

MBBS IN SINGAPORE

The Lee Kong Chian School of Medicine (LKCMedicine) offers a five-year undergraduate programme leading to a medical degree (MBBS) awarded jointly by Imperial and Nanyang Technological University (NTU) in Singapore. It is targeted primarily at Singaporean students.

LKCMedicine's innovative programme is accredited by the Singapore Medical Council. It has been designed and developed by Imperial in collaboration with LKCMedicine faculty to produce doctors who will meet Singapore's healthcare needs. It emphasises the clinical relevance of the basic sciences and early patient interaction from the very beginning of the course, training students to put a patient's individual needs at the centre of all care.

Students will gain a thorough understanding of the scientific basis for medicine, as well as broader management and communication skills. They will also benefit from innovative and interactive approaches to learning, including extensive use of simulation, team-based learning and e-learning.



MBBS student and scholarship recipient Clarissa with Professor Waljit Dhillon, Professor of Endocrinology and Metabolism, whose research focuses on novel aspects of endocrine control of obesity and reproductive function

ENTRY REQUIREMENTS

A/AS-LEVEL GRADES

AAA + AS-level at Grade B overall, to include:

- A** Chemistry
- A** Biology
- A** another subject (Mathematics preferred)
- B** at AS-level or above (this must be in Mathematics if not offered at A-level)

The AS requirement is under review; see our website for details.

IB SCORES

38 points overall, to include:

- 6** Biology at higher level
- 6** Chemistry at higher level

GCSE (or equivalent)

AAAB to include: English Language, Mathematics and Science

ADDITIONAL CRITERIA

- ✓ Admissions test – BMAT is required
- ✗ Interview

A minimum standard of English language applies for all applicants – see page 62 for details.

These are the minimum entry requirements for the Department – actual entry requirements may vary.

For more information see: www.imperial.ac.uk/study/ug/medicine

BIOMEDICAL SCIENCE DEGREES

QUALIFICATION AND PROGRAMME TITLE	UCAS CODE	ECTS CREDITS*	LENGTH
BSc Biomedical Science	B900	180	3 years
BSc Biomedical Science with Management	B9N2	240	4 years

* For more information about ECTS credits see page 130.

All MBBS and Biomedical Science degrees delivered at Imperial College London lead to the award of the Associateship of Imperial College School of Medicine (AICSM).

WHAT CAN YOU STUDY?

What you study

BIOMEDICAL SCIENCE

This degree encompasses the study of the science that forms the basis of medicine and related fields, including scientific laboratory-based knowledge and understanding. It explores the principles and practice of biomedical science and how they are applied in research, industry and medicine.

As the course progresses you will be able to specialise and tailor the programme to your own individual needs and career aspirations. You will be taught by staff from a range of departments at Imperial. Year one study includes core modules in Cell and Molecular Biology, and Human Biology. In year two students undertake a further programme of core modules, including Advanced Molecular Biology, Epidemiology, Pharmacology, Infectious Diseases, Cancer Biology and Immunology. You will also choose a specialist option and complete a dissertation selected from a wide range of options.

In the final year, you can tailor the programme to suit your specific interests by selecting one of a range of topics from the MBBS/BSc Medicine programme – see our website for details.



DID YOU KNOW?

Brain imaging studies led by Imperial's Professor David Nutt gave scientists the most detailed picture to date of the effects of magic mushrooms on neural activity.

Functional magnetic resonance imaging (fMRI) scans revealed that the active ingredient, psilocybin, suppresses activity in well-connected brain areas associated with consciousness and self-identity.

BIOMEDICAL SCIENCE WITH MANAGEMENT

This degree combines the BSc Biomedical Science programme (see above) with an additional year of study within Imperial College Business School (page 10).

YOUR DEGREE CHOICE

Imperial's Biomedical Science degrees are designed for individuals who wish to progress to a variety of academic, research, and other professional fields. Neither B900 nor B9N2 are accredited by the Institute of Biomedical Science (IBMS) for careers in hospital clinical diagnostic laboratories.

It is not possible to transfer from Biomedical Science to Medicine.



Students learning to take blood as part of a practical in the Sir Alexander Fleming laboratory

What our graduates do

Graduates from the School of Medicine enter a wide and diverse range of careers, including medical practice, biomedical research, the pharmaceutical industry, scientific journalism and healthcare management.

MBBS GRADUATES

Achieving an MBBS degree from Imperial provides you with a primary medical qualification (PMQ). Holding a PMQ entitles you to provisional registration with the General Medical Council (GMC) and license to practise in approved Foundation Year 1 posts, subject only to acceptance by the GMC that there are no fitness to practise concerns that need consideration.

You will need to apply for a Foundation Year 1 post during the final year of your undergraduate course through the UK Foundation Programme Office selection scheme, which allocates these posts on a competitive basis. So far, all suitably qualified UK graduates have found a place on the Foundation Year 1 programme, but this cannot be guaranteed.

On successful completion of the Foundation Year 1 programme you will be eligible to apply

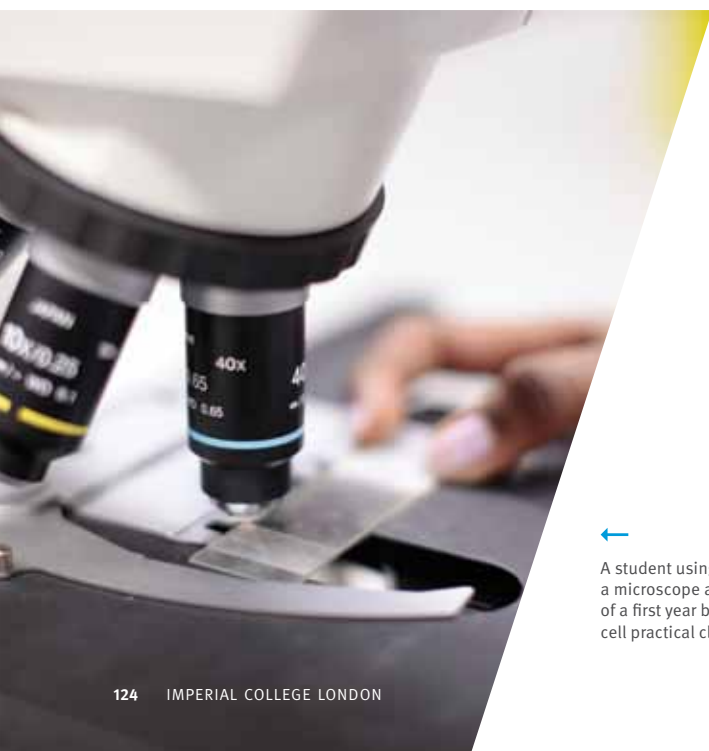
for full registration with the GMC before entering Foundation Year 2. Doctors need full registration with a licence to practise for unsupervised medical practice in the NHS or UK private practice.

This information is correct at the time of printing (January 2015) but please be aware that regulations in this area are subject to change.

BIOMEDICAL SCIENCE GRADUATES

A degree in Biomedical Science provides a firm foundation for higher level study on a range of scientific programmes, including Graduate MBBS Medicine.

The degree is excellent preparation for a wide range of careers and previous students have successfully found employment in areas ranging from scientific research and laboratories in the pharmaceutical industry to technical consultancy. A number of graduates will also move into other sectors which value the skills and academic rigour the course provides.



A student using a microscope as part of a first year blood cell practical class

FIND OUT MORE



Full course information
www.imperial.ac.uk/study/ug/medicine

Admissions team
+44 (0)20 7594 7259
medicine.ug.admissions@imperial.ac.uk

DEPARTMENT OF

Physics

The study of the universe and its origins; the understanding of how matter behaves through space and time

240

→ Total expected intake

5.5:1

→ Applications: admissions ratio (for 2013 entry)

10.5:1

→ Student:staff ratio (2013–14)

The Department

Imperial's Department of Physics is one of the largest and most exciting in the UK. Our vibrant and internationally leading research programme provides broad-based coverage of both fundamental and applied physics, contributing to ground-breaking discoveries in fields such as string theory, the origins of the universe, particle physics, thermonuclear fusion, laser science, and materials physics, among many others.

Past Department members include three Nobel Prize winners, and we are currently home to 17 Fellows of the Royal Society. Recent highlights of our research programme have included the discovery of the most distant quasar yet seen, confirmation of exactly how round an electron is, the concept of space-time cloaking, how the recent behaviour of the Sun may be influencing climate, and our leading role in the successful search for the Higgs boson.

Our students have access to state-of-the-art lasers, facilities for nanoscale fabrication in clean room environments, plasma physics experiments, and data collected from major experiments such as CERN and from international space missions.

We have recently established an Industry Club to cement our relationship with industry and bring direct benefits to our students. A number of companies have also been successfully 'spun out' from research within the Department.



Dr David Clements, Lecturer in Astrophysics, demonstrating the use of liquid nitrogen cooling in a solid state physics experiment to third year students in the Blackett Laboratory

ENTRY REQUIREMENTS

A-LEVEL GRADES

A* A* A

overall, to include:

A* Mathematics

A Physics

IB SCORES

39 points

overall, to include:

7, 6, 6 at higher level which must include Mathematics and Physics

MUSIC PERFORMANCE

Grade 8

with distinction in the Associated Board of the Royal Schools of Music (ABRSM) examination (or equivalent)

ADDITIONAL CRITERIA

- ✓ Interview – candidates who demonstrate potential on their UCAS form
- ✓ Admissions test (Music Performance only – see website for details)

A minimum standard of English language applies for all applicants – see page 62 for details.

These are the minimum entry requirements for the Department – actual entry requirements may vary. For Year Abroad degrees an additional language qualification may be required.

For more information see: www.imperial.ac.uk/study/ug/physics

OUR DEGREES

QUALIFICATION AND PROGRAMME TITLE	UCAS CODE	ECTS CREDITS*	LENGTH
BSc Physics ●	F300	180	3 years
BSc Physics with Theoretical Physics ●	F325	180	3 years
MSci Physics ●	F303	240	4 years
MSci Physics with Theoretical Physics ●	F390	240	4 years
MSci Physics with a Year in Europe ●	F309	240	4 years
BSc Physics and Music Performance ●	F3W3	310	4 years
BSc Physics with Science Education ●	n/a†	186	3 years
MSci Physics with Science Education ●	n/a†	240	4 years

* For more information about ECTS credits see page 130.

† Apply initially for any BSc or MSci course within the Department of Physics.

● PROFESSIONAL ACCREDITATION

These degrees are accredited by the Institute of Physics – see page 9. They also lead to the award of the Associateship of the Royal College of Science (ARCS) – see page 130.



Members of the Plasma Physics Group working in the Gas Gun facility, which provides the opportunity to investigate how materials behave under high pressures and temperatures

What our graduates do

Imperial's Physics graduates are sought after by a wide range of employers – for example, the electronics industry needs physicists to design next-generation display technologies, lasers, optical fibres, and advanced semiconductor devices. Increasingly the energy sector looks to physicists to improve photovoltaic cells for solar energy generation, to optimise wave and wind power technologies, and to improve the efficiency of electrical components.

Recent graduates of the Department have become...

- 1 Analyst, Defence Science and Technology Laboratory
- 2 Research engineer, Dyson
- 3 Technology consultant, IBM
- 4 Teaching assistant, British Council
- 5 Consultant, Microsoft

What you study

In years one and two all students study a common core of modules to gain a good grounding in the fundamental aspects of physics, mathematics and experimental methods. This includes Mathematics, Mechanics, Electromagnetism, Quantum Physics, Relativity, Optics and Thermodynamics.

We introduce more optional modules as the degree progresses in a range of exciting subjects to allow you to tailor your course to your areas of interest, such as Astrophysics, Medical Imaging, Plasma Physics, Cosmology, Laser Technology and Unification. In year three you may also choose to take a business or humanities module. All our degrees include a substantial final year project undertaken in one of our research groups.

PHYSICS WITH THEORETICAL PHYSICS

This degree is ideally suited to those with a specific interest in mathematics and its application. It also places less emphasis on experimental work. Years one and two include an additional mathematics module, and as the degree progresses, a choice of theoretical optional modules such as Group Theory, Complexity and Networks, General Relativity and Quantum Field Theory. The final year project is also on a theoretical topic.

PHYSICS WITH SCIENCE EDUCATION

This degree allows you to combine the study of physics with the opportunity to acquire Qualified Teacher Status (QTS). Upon completion you will be qualified to teach science at schools in England and Wales without the need for a further postgraduate qualification. Students should initially apply for any of the Department's other degrees and transfer at the end of their second year. Our teacher training partner is Canterbury Christ Church University, a leading provider of Initial Teacher Training (ITT).

PHYSICS AND MUSIC PERFORMANCE

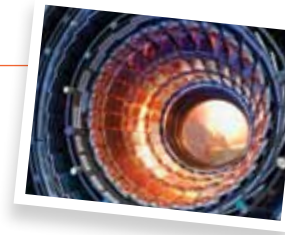
This degree offers a unique opportunity to combine physics with a passion for music performance, preparing you for a professional career in either field. Taught jointly by Imperial and the Royal College of Music (RCM), you will study all the core physics material from our three-year BSc degree as well as some optional modules to ensure that you graduate as a fully qualified physicist. In parallel, you will complete the main performance elements of the RCM's BMus degree on one principal instrument. Because of the demanding workload the programme is spread over four years.

YEAR IN EUROPE DEGREE

This degree offers you the chance to challenge yourself in a different academic and cultural environment. You will have the opportunity to spend year three studying at a leading university in France, Germany, Spain, Italy or Switzerland via the Erasmus scheme. While abroad you undertake a combination of modules and a major project, with grades achieved counting towards your Imperial degree. Teaching is normally in the host country's language so some year one and two modules may be substituted for language studies to ensure you achieve the required level. Limited places means competition for some placements is strong so only students who are on track for a 2.1 degree or above by the time of selection in year two will be eligible.



DID YOU KNOW?



Imperial researchers are amongst those who designed, engineered and built the CMS detector – one of two huge experiments searching for Higgs boson particles at the Large Hadron Collider (LHC) – and analysed its results. In 2012, LHC officials announced the discovery of a Higgs boson – ranked by some as the most significant scientific achievement of the last forty years.

FIND OUT MORE



Full course information
www.imperial.ac.uk/study/ug/physics

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ph.admissions@imperial.ac.uk

About our degrees

TYPES OF QUALIFICATIONS

Our degrees generally last three or four years and lead to the award of:

- ▶ Bachelor of Science (BSc)
- ▶ Master in Science (MSci)
- ▶ Bachelor of Engineering (BEng)
- ▶ Master of Engineering (MEng)

The MEng and the MSci (not to be confused with the postgraduate MSc qualification) are integrated Master's courses. These provide undergraduates, within a single course, with the educational qualifications required for accreditation for a professional career in the relevant area, or as preparation for a PhD.

The Bachelor of Medicine and Bachelor of Surgery (MBBS) degree lasts six years. It integrates a BSc degree within the curriculum, providing a double qualification. The College also offers a five-year Graduate MBBS Medicine course.

Joint Honours degrees, which allow you to combine two disciplines, are available in certain subjects – please see our A–Z list of courses (pages 134–136) and our courses section (pages 64–129) for details.

ASSOCIATESHIPS

Imperial has a number of historic constituent colleges which present honorary awards to our graduates, alongside their undergraduate qualification. Depending on what you're studying, you may earn one of the following in addition to your Imperial degree:

- ▶ Associateship of the Royal College of Science (ARCS)
- ▶ Associateship of the Royal School of Mines (ARSM)
- ▶ Associateship of the City and Guilds of London Institute (ACGI)
- ▶ Associateship of the Imperial College School of Medicine (AICSM)

EUROPEAN CREDIT TRANSFER SYSTEM

All of our science and engineering courses are assigned a credit value under the European Credit Transfer System (ECTS). ECTS is part of the Bologna Process, a European initiative to bring about transparency and compatibility across higher education in Europe.

Successful completion of an academic year of three terms earns you 60 ECTS credits. Bachelor's degrees have an ECTS value of at least 180 credits.

Some of our integrated Master's degrees incorporate assessed work outside the academic terms and therefore attract 270 (or more) ECTS credits. Where integrated Master's degrees attract 240 ECTS credits, some but not all students will have the option of undertaking additional study or project work in the summer vacations to raise their ECTS count to 270.

ECTS does not currently apply to undergraduate Medicine.

TERM DATES 2016–17

Autumn term:
1 October – 16 December 2016

Spring term:
7 January – 24 March 2017

Summer term:
29 April – 30 June 2017

These dates are provisional and may be amended. Some courses, for example courses with a year abroad or with a year in industry, have different term dates.

PROVISION OF COURSES

The academic year is based on three terms: autumn, spring and summer. The College does not operate a semester system. Details of courses, including ECTS credits, may change following publication. Please check the Undergraduate Study website for the latest information:

www.imperial.ac.uk/study/ug

The College will use all reasonable endeavours to deliver courses in accordance with the descriptions set out in this Prospectus. However, the College does not provide education to UK undergraduates on a commercial basis.

The College reserves the right to make variations to the content or methods of delivery of courses, to discontinue courses and to merge or combine courses, if such action is reasonably considered to be necessary by the College in the context of its wider purposes. If the College discontinues any course, it will use reasonable endeavours to provide a suitable alternative course.



THE SMALL PRINT

The information given in this printed Prospectus, including that relating to the availability of courses, is current at the time of going to press, December 2014, and is subject to alteration. For the latest information: www.imperial.ac.uk/study/ug

The College welcomes comments on its courses from students' parents and sponsors. However, the College's contracts with its students do not confer benefits on third parties for the purposes of the Contracts (Rights of Third Parties) Act 1999.

Statistics on student and staff numbers and staff:student ratios in this document relate to the academic year 2013–14, and are taken from the Imperial College London Pocket Statistics Guide 2013–14: www.imperial.ac.uk/about/introducing-imperial/facts-and-figures/college-statistics

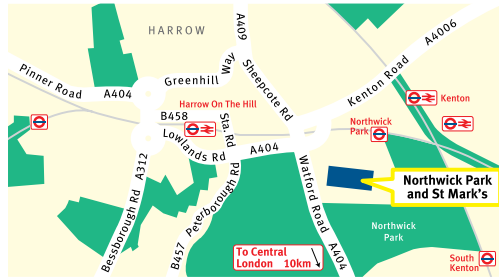
Data protection

Imperial College London processes certain personal data of its staff and students for standard university administrative processes. Any processing of personal data by the College will be made in accordance with the College's Data Protection Policy and the Data Protection Act 1998. Find out more: www.imperial.ac.uk/legalservicesoffice/dataprotection

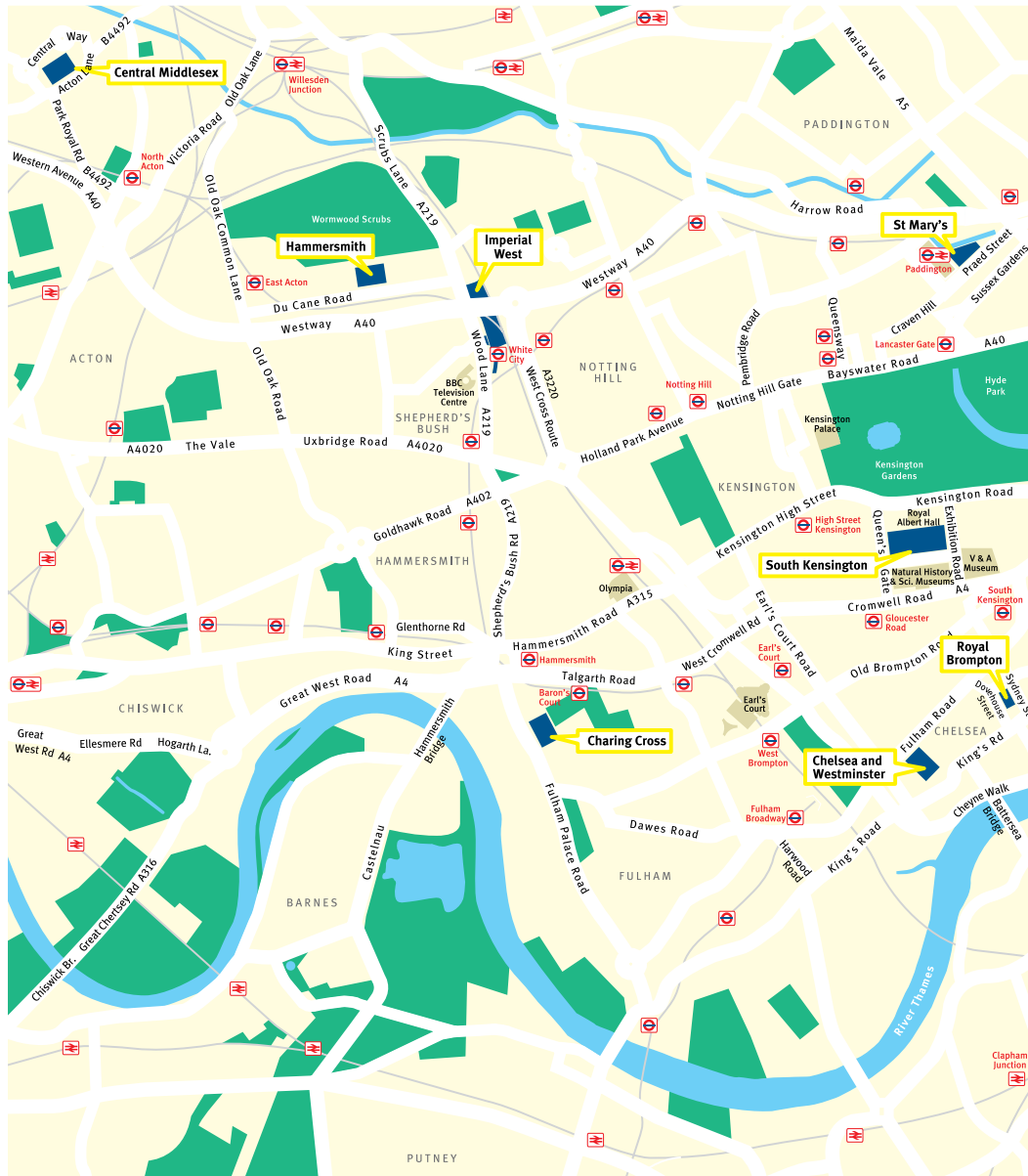
For the latest information about all of our undergraduate courses:

www.imperial.ac.uk/study/ug

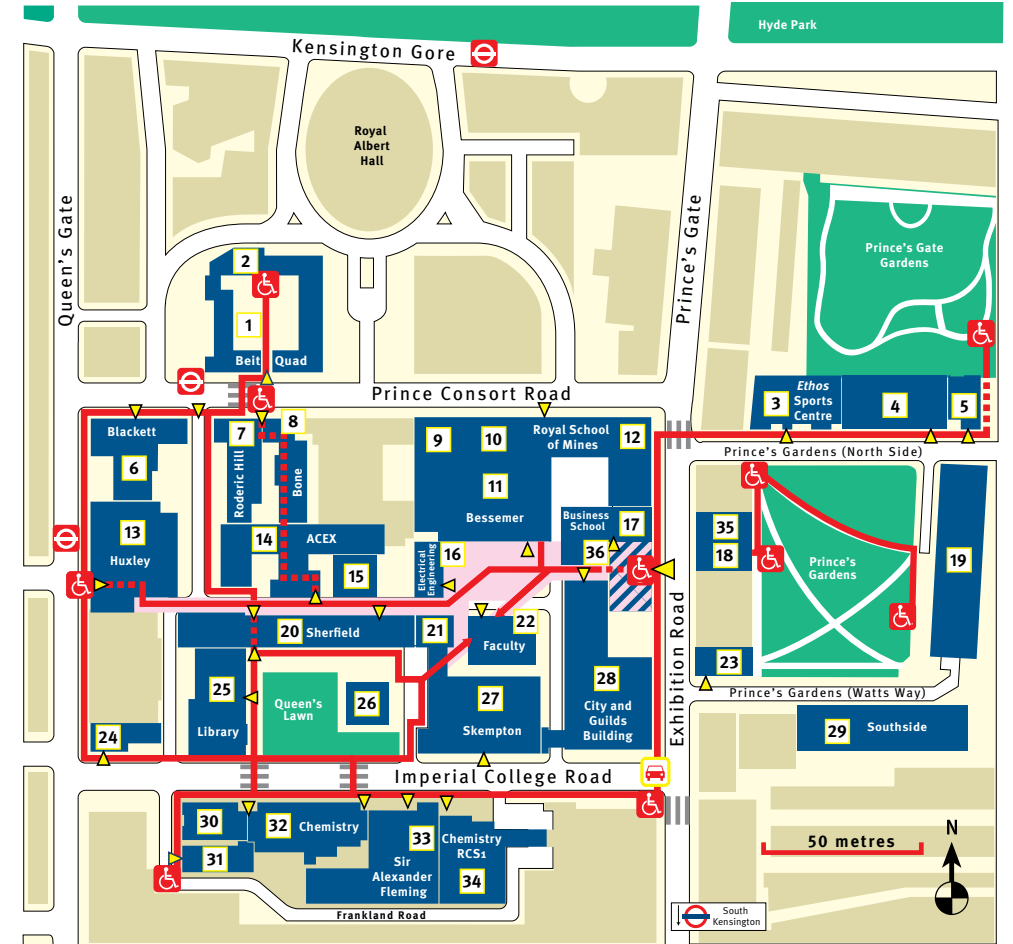
North West London



Central London



South Kensington Campus



- | | | | |
|---|--|---|---|
| <ul style="list-style-type: none"> 1 Beit Quadrangle 2 Imperial College Union 3 Ethos Sports Centre 4 Prince's Gdns, North Side 5 Weeks Hall 6 Blakett Laboratory 7 Roderic Hill Building 8 Bone Building 9 Royal School of Mines 10 Aston Webb 11 Bessemer Building | <ul style="list-style-type: none"> 12 Goldsmiths Building 13 Huxley Building 14 ACE Extension 15 William Penney Laboratory 16 Electrical Engineering 17 Business School 18 53 Prince's Gate 19 Eastside 20 Sherfield Building Student Hub Conference Office | <ul style="list-style-type: none"> 21 Grantham Institute for Climate Change 22 Faculty Building 23 58 Prince's Gate 24 170 Queen's Gate 25 Central Library 26 Queen's Tower 27 Skempton Building Building 28 City and Guilds Building 29 Southside | <ul style="list-style-type: none"> 30 Sir Ernst Chain Building – Wolfson Laboratories 31 Flowers Building 32 Chemistry Building 33 Sir Alexander Fleming Building 34 Chemistry RCS1 35 52 Prince's Gate 36 Alumni Visitor Centre |
|---|--|---|---|

A–Z degree directory

UCAS CODE	LENGTH (YEARS)	DEGREE	COURSE TITLE	DEPARTMENT	PAGE
H401	4	MEng	Aeronautical Engineering	Aeronautics	64
n/a	4	MEng	Aeronautical Engineering with a Year Abroad ¹	Aeronautics	64
n/a	5	MEng	Aeronautical Engineering with a Year in Industry ¹	Aeronautics	64
HJ45	4	MEng	Aerospace Materials	Materials	108
C700	3	BSc	Biochemistry	Life Sciences	102
C7N2	3	BSc	Biochemistry with Management	Life Sciences	102
C7R1	4	BSc	Biochemistry with French for Science	Life Sciences	102
C7R2	4	BSc	Biochemistry with German for Science	Life Sciences	102
C7NG	4	BSc	Biochemistry with Management	Life Sciences	102
C7NF	4	BSc	Biochemistry with Management and a Year in Industry/Research	Life Sciences	102
C7NA	5	BSc	Biochemistry with Management with a Year in Industry/Research	Life Sciences	102
C7O2	4	BSc	Biochemistry with Research Abroad	Life Sciences	102
C7R4	4	BSc	Biochemistry with Spanish for Science	Life Sciences	102
C7O1	4	BSc	Biochemistry with a Year in Industry/Research	Life Sciences	102
C100	3	BSc	Biological Sciences	Life Sciences	102
C1R1	4	BSc	Biological Sciences with French for Science	Life Sciences	102
C1R2	4	BSc	Biological Sciences with German for Science	Life Sciences	102
C1N2	3	BSc	Biological Sciences with Management	Life Sciences	102
C1NG	4	BSc	Biological Sciences with Management	Life Sciences	102
C1NF	4	BSc	Biological Sciences with Management and a Year in Industry/Research	Life Sciences	102
C1NA	5	BSc	Biological Sciences with Management with a Year in Industry/Research	Life Sciences	102
C1R4	4	BSc	Biological Sciences with Spanish for Science	Life Sciences	102
C1O2	4	BSc	Biological Sciences with Research Abroad	Life Sciences	102
C110	4	BSc	Biological Sciences with a Year in Industry/Research	Life Sciences	102
BJ95	4	MEng	Biomaterials and Tissue Engineering	Materials	108
BH9C	4	MEng	Biomedical Engineering	Bioengineering	68
n/a	5	MEng	Biomedical Engineering with a Year in Industry ²	Bioengineering	68
B900	3	BSc	Biomedical Science	Medicine	120
B9N2	4	BSc	Biomedical Science with Management	Medicine	120
J700	3	BSc	Biotechnology	Life Sciences	102
J7R1	4	BSc	Biotechnology with French for Science	Life Sciences	102
J7R2	4	BSc	Biotechnology with German for Science	Life Sciences	102
J7N2	4	BSc	Biotechnology with Management	Life Sciences	102
J7NF	5	BSc	Biotechnology with Management with a Year in Industry/Research	Life Sciences	102
J7O1	4	BSc	Biotechnology with Research Abroad	Life Sciences	102
J7R4	4	BSc	Biotechnology with Spanish for Science	Life Sciences	102
J7O2	4	BSc	Biotechnology with a Year in Industry/Research	Life Sciences	102
H801	4	MEng	Chemical Engineering	Chemical Engineering	72
H802	4	MEng	Chemical Engineering with a Year Abroad	Chemical Engineering	72
H890	4	MEng	Chemical with Nuclear Engineering	Chemical Engineering	72

UCAS CODE	LENGTH (YEARS)	DEGREE	COURSE TITLE	DEPARTMENT	PAGE
F100	3	BSc	Chemistry	Chemistry	76
F103	4	MSci	Chemistry	Chemistry	76
F1R1	4	MSci	Chemistry with French for Science	Chemistry	76
F1R2	4	MSci	Chemistry with German for Science	Chemistry	76
F1NF	4	BSc	Chemistry with Management	Chemistry	76
FN11	5	BSc	Chemistry with Management and a Year in Industry	Chemistry	76
F124	4	MSci	Chemistry with Medicinal Chemistry	Chemistry	76
F125	5	MSci	Chemistry with Medicinal Chemistry and a Year in Industry	Chemistry	76
F1F3	4	MSci	Chemistry with Molecular Physics	Chemistry	76
F1FH	5	MSci	Chemistry with Molecular Physics and a Year in Industry	Chemistry	76
F104	4	MSci	Chemistry with Research Abroad	Chemistry	76
F101	5	MSci	Chemistry with Research Abroad and a Year in Industry	Chemistry	76
F1R4	4	MSci	Chemistry with Spanish for Science	Chemistry	76
F105	5	MSci	Chemistry with a Year in Industry	Chemistry	76
H201	4	MEng	Civil Engineering	Civil and Environmental Engineering	80
H202	4	MEng	Civil Engineering with a Year Abroad	Civil and Environmental Engineering	80
G400	3	BEng	Computing	Computing	84
G401	4	MEng	Computing	Computing	84
G700	4	MEng	Computing (Artificial Intelligence)	Computing	84
G501	4	MEng	Computing (Computational Management)	Computing	84
G430	4	MEng	Computing (Computation in Biology and Medicine)	Computing	84
GG47	4	MEng	Computing (Games, Vision and Interaction)	Computing	84
G402	4	MEng	Computing (International Programme of Study)	Computing	84
G600	4	MEng	Computing (Software Engineering)	Computing	84
28G3	4	MEng	Design Engineering	Dyson School of Design Engineering	90
C180	3	BSc	Ecology and Environmental Biology	Life Sciences	102
H600	3	BEng	Electrical and Electronic Engineering	Electrical and Electronic Engineering	98
H604	4	MEng	Electrical and Electronic Engineering	Electrical and Electronic Engineering	98
H6N2	4	MEng	Electrical and Electronic Engineering with Management	Electrical and Electronic Engineering	98
H601	4	MEng	Electrical and Electronic Engineering with a Year Abroad	Electrical and Electronic Engineering	98
HG65	3	BEng	Electronic and Information Engineering	Electrical and Electronic Engineering	98
GH56	4	MEng	Electronic and Information Engineering	Electrical and Electronic Engineering	98
HG6M	4	MEng	Electronic and Information Engineering with a Year Abroad	Electrical and Electronic Engineering	98
F600	3	BSc	Geology	Earth Science and Engineering	94
F640	4	MSci	Geology	Earth Science and Engineering	94
F661	4	MSci	Geology and Geophysics	Earth Science and Engineering	94
F601	4	MSci	Geology with a Year Abroad	Earth Science and Engineering	94
F662	3	BSc	Geophysics	Earth Science and Engineering	94
F660	4	MSci	Geophysics	Earth Science and Engineering	94
F664	4	MSci	Geophysics with a Year Abroad	Earth Science and Engineering	94
JF52	3	BEng	Materials Science and Engineering	Materials	108
JFM2	4	MEng	Materials Science and Engineering	Materials	108
J5N2	3	BEng	Materials with Management	Materials	108
J5H8	4	MEng	Materials with Nuclear Engineering	Materials	108
G100	3	BSc	Mathematics	Mathematics	112
G103	4	MSci	Mathematics	Mathematics	112
GG14	3	BEng	Mathematics and Computer Science	Computing/Mathematics	84
GG41	4	MEng	Mathematics and Computer Science	Computing/Mathematics	84

WHAT CAN YOU STUDY?

UCAS CODE	LENGTH (YEARS)	DEGREE	COURSE TITLE	DEPARTMENT	PAGE
G143	4	MEng	Mathematics and Computer Science (Computational Statistics)	Computing/Mathematics	84
IG11	4	MEng	Mathematics and Computer Science (Pure Maths and Computational Logic)	Computing/Mathematics	84
G125	3	BSc	Mathematics (Pure Mathematics)	Mathematics	112
GG31	3	BSc	Mathematics, Optimisation and Statistics	Mathematics	112
G104	4	MSci	Mathematics with a Year in Europe	Mathematics	112
G1F3	3	BSc	Mathematics with Applied Mathematics/Mathematical Physics	Mathematics	112
G102	3	BSc	Mathematics with Mathematical Computation	Mathematics	112
G1G3	3	BSc	Mathematics with Statistics	Mathematics	112
G1GH	3	BSc	Mathematics with Statistics for Finance	Mathematics	112
H301	4	MEng	Mechanical Engineering	Mechanical Engineering	116
H304	4	MEng	Mechanical Engineering with a Year Abroad	Mechanical Engineering	116
n/a	4	MEng	Mechanical with Nuclear Engineering ³	Mechanical Engineering	116
A100	6	MBBS/ BSc	Medicine	Medicine	120
A109	5	MBBS	Graduate Medicine	Medicine	120
n/a	8/9	MBBS/ PhD	Medicine ⁴	Medicine	120
n/a	5	MBBS	Medicine (Lee Kong Chian School of Medicine) ⁵	Medicine	120
C500	3	BSc	Microbiology	Life Sciences	102
F663	4	MSci	Petroleum Geoscience	Earth Science and Engineering	94
F300	3	BSc	Physics	Physics	126
F303	4	MSci	Physics	Physics	126
F3W3	4	BSc	Physics and Music Performance	Physics	126
n/a	3	BSc	Physics with Science Education ⁶	Physics	126
n/a	4	MSci	Physics with Science Education ⁶	Physics	126
F325	3	BSc	Physics with Theoretical Physics	Physics	126
F390	4	MSci	Physics with Theoretical Physics	Physics	126
F309	4	MSci	Physics with a Year in Europe	Physics	126

NOTES

- 1 Apply initially for MEng Aeronautical Engineering (H401).
- 2 Apply initially for MEng Biomedical Engineering (BH9C).
- 3 Apply initially for MEng Mechanical Engineering (H301).
- 4 Apply initially for A100 (MBBS/BSc) or Graduate Medicine.
- 5 Awarded jointly by Imperial College London and Nanyang Technological University.
- 6 Apply initially for any BSc or MSci course within the Department of Physics.

If you have any questions about the course you are interested in, please contact the department directly. You can find contact details for each department on pages 64–129.

THANK YOU

Principal photography: Thomas Angus; FJ Gaylor; Dave Guttridge/The Photographic Unit; Layton Thompson. Arranged and directed by Imperial College London.

Imperial is grateful to all the generous people who let us use their photos in this year's prospectus. The following additional photographs were provided courtesy of:

p1 Iain Reid; p9 Racing Green Endurance; p12–13 Jo, Gareth, Caterina, e.quinox, Sophie, Clare Senna; p20–21 BBOX; p22 United Launch Alliance, Tim Horbury, Pradeep Luther; p24–25 Hannah Ralston, Robert Taylor; p26–27 Sergiu, Michele Panzeri, Tom Wheeler, Tom Roberts; p31 Giri; p34–35 London on View; p36–37 London on View, Lluís Ribes, Mala; p39 Voreda; p44 Tim Smith; p47 Ian Gillett, Berkeley First; p48 Tim Smith; p50–51 Sean Gannon, Andrea Michi, Ian Gillett, Benjamin Lester; p54–55 Alexander Yip, Jarvist Moore Frost, Tim Burne, Ian Gillett, Andrea Michi; p89 ©A.M.P.A.S.®; p93 Yifei Chai; p96 NASA/JPL-Caltech; p101 e.quinox; p107 Sandro Von Matter; p129 STFC



Designed, edited and produced by the Student Recruitment and Outreach and Communications and Public Affairs Divisions, Imperial College London, 2014.

We'd love to hear what you think about our Prospectus – get in touch: prospectus@imperial.ac.uk

COME TO AN OPEN DAY AND SEE WHY THOUSANDS OF STUDENTS CHOOSE IMPERIAL EACH YEAR

Undergraduate Open Days

24 and 25 June 2015


19 September 2015


Medicine MBBS only


22 April 2015

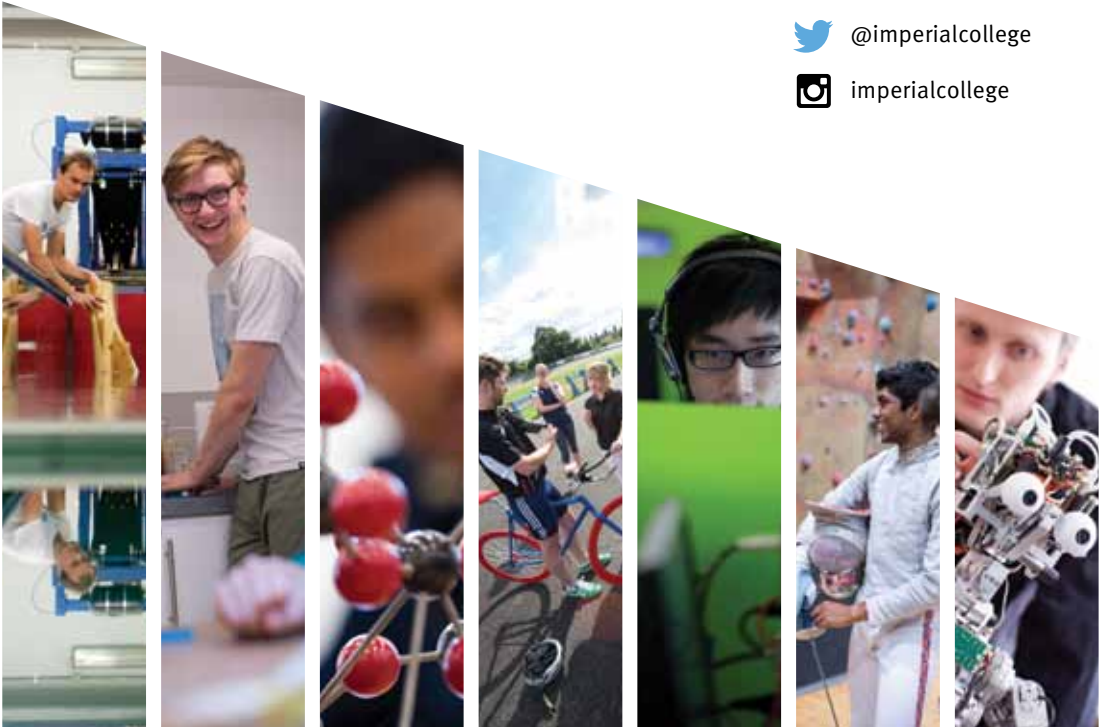
Find out more about College and departmental open days, summer schools and taster days, and chances to connect with Imperial around the UK and the rest of the world:

www.imperial.ac.uk/study/ug/visit

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