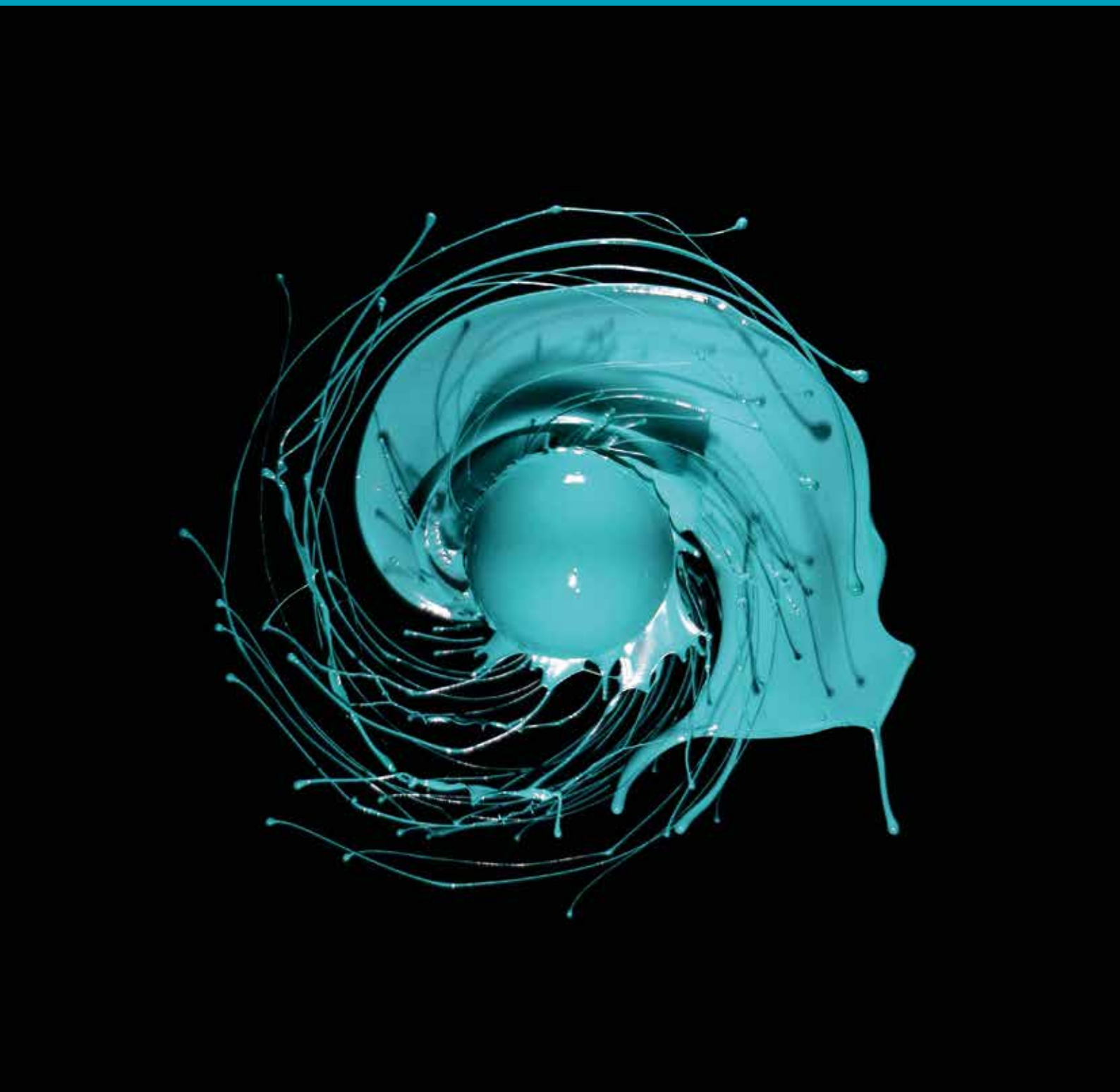
UNIVERSITY OF BIRMINGHAM | SCHOOL OF CHEMICAL ENGINEERING

CHEMICAL ENGINEERING



Welcome to the School

CHEMICAL ENGINEERING HAS A PROFOUND IMPACT ON OUR DAILY LIVES AS MANY OF THE CHEMICALS, FUELS AND PRODUCTS WE TAKE FOR GRANTED ARE MADE USING CHEMICAL ENGINEERING EXPERTISE.

How do we manufacture catalysts with optimised activity that contain the minimum amount of valuable materials to preserve resources? How do we recycle and recover critical elements and plastic materials from expired items such as batteries and catalytic converters from aeroplanes and cars? How do we design and manufacture a shampoo formulation that feels good to use and conditions your hair effectively? How do we change food manufacturing to produce foods with great taste and appeal with much-reduced levels of salt and fat? How do we design a drug delivery system that delivers the drug in the body to precisely where it is needed for optimal treatment? How do we make clothes smell fresh for longer? How do fuel additives protect the internals of jet engines in flight? As a Chemical Engineering student studying at Birmingham, our degree programmes will deliver answers to these questions and through the knowledge you gain, take you to the cutting edge of the discipline.

Chemical Engineering at Birmingham has one of the largest concentrations of expertise in the UK, covering the fundamentals of chemical engineering including reaction and catalyst engineering, thermodynamics, energy systems, process control, safety, ethics and environmental impact and transport phenomena.

We have a long history of generating research in collaboration with industry that generates international impact, as evidenced by our top result for impact in the UK Research Excellence Framework in 2014 and the award of a Queen's Anniversary Prize in 2011. We hold one of the longest standing training centres for postgraduate students (EPSRC CDT in Formulation Engineering) working directly with industry on the development of processes to manufacture microstructured products such as home and personal care products, foods, pharmaceuticals and catalysts. We have industrial collaborations with leading multinational companies including Procter & Gamble, Johnson Matthey, Rolls-Royce, Unilever, Imerys (FiberLean), Dupont Teijin Films, Mondelez, PepsiCo, GSK, AstraZeneca and Diageo. We host the Birmingham Centre for Energy Storage, which is developing materials and processes that enable and optimise the storage of energy from renewable energy sources such as wind and solar power and reduce cooling and heating duties in transportation and in buildings. Our Healthcare Technologies Institute, run jointly with the University of Birmingham's Medical School, is changing the landscape of healthcare. We are developing new technologies and treatments that encourage better tissue healing by prevention of scarring and rehabilitation tools such as new designs of bone implants to ensure people live longer, healthier and happier lives. Our research shapes, drives and refreshes our chemical engineering curriculum; not only are you taught by world experts in the field but MEng students gain the opportunity to take part in the research itself through the final-year research project.

Birmingham Chemical Engineering graduates are highly sought after by industry for their ability to solve problems and work well with others, often from other disciplines, as well as their overall knowledge and ability to think on their feet. This is evidenced by the number of our students offered top jobs and summer placements by top multinational companies including ExxonMobil, BP, Rolls-Royce, Procter & Gamble and Unilever, to name but a few. Our students also frequently win prestigious awards external to the University such as the Salters' Prize.

Development of core technical and transferable skills is at the heart of our teaching from day one. You will take part in team-based project work in each year of the course where the knowledge you learn in lectures and tutorials is applied in practice in a small group environment. By applying the fundamentals of the subject to tackle the design of a process for manufacture of a molecule, material or product at various levels of complexity as your knowledge develops, you will gain the confidence to talk the language of chemical engineering and develop reasoned arguments for your choice of process method or product design.
We are very proud of the fact that our students find their time at Birmingham fulfilling and enjoyable from both an academic and social perspective. We view the learning process as a partnership between students and staff, giving students multiple opportunities to feedback their experiences of the course through small group personal tutorials, weekly student voice meetings and a staff-student consultative committee. We are particularly proud to have one of the best student societies in the University (voted Society of the Year 2015/16).

We would be delighted to welcome you to the School to find out about our degree programmes and the University in general. Details of our Open Days and Offer-holder Visit Days are on our webpage or available by phone from the Admissions Team Office. I look forward to meeting you during your visit.

Professor Mark Simmons
Head of School

I am a chemical engineer with expertise in multiphase flows including particles, droplets, bubbles and waves. Following a Royal Society Industry Fellowship with Johnson Matthey, my research is directed towards the manufacturability of catalysts, spray dried particles (Procter & Gamble) and home and personal care products (Unilever).

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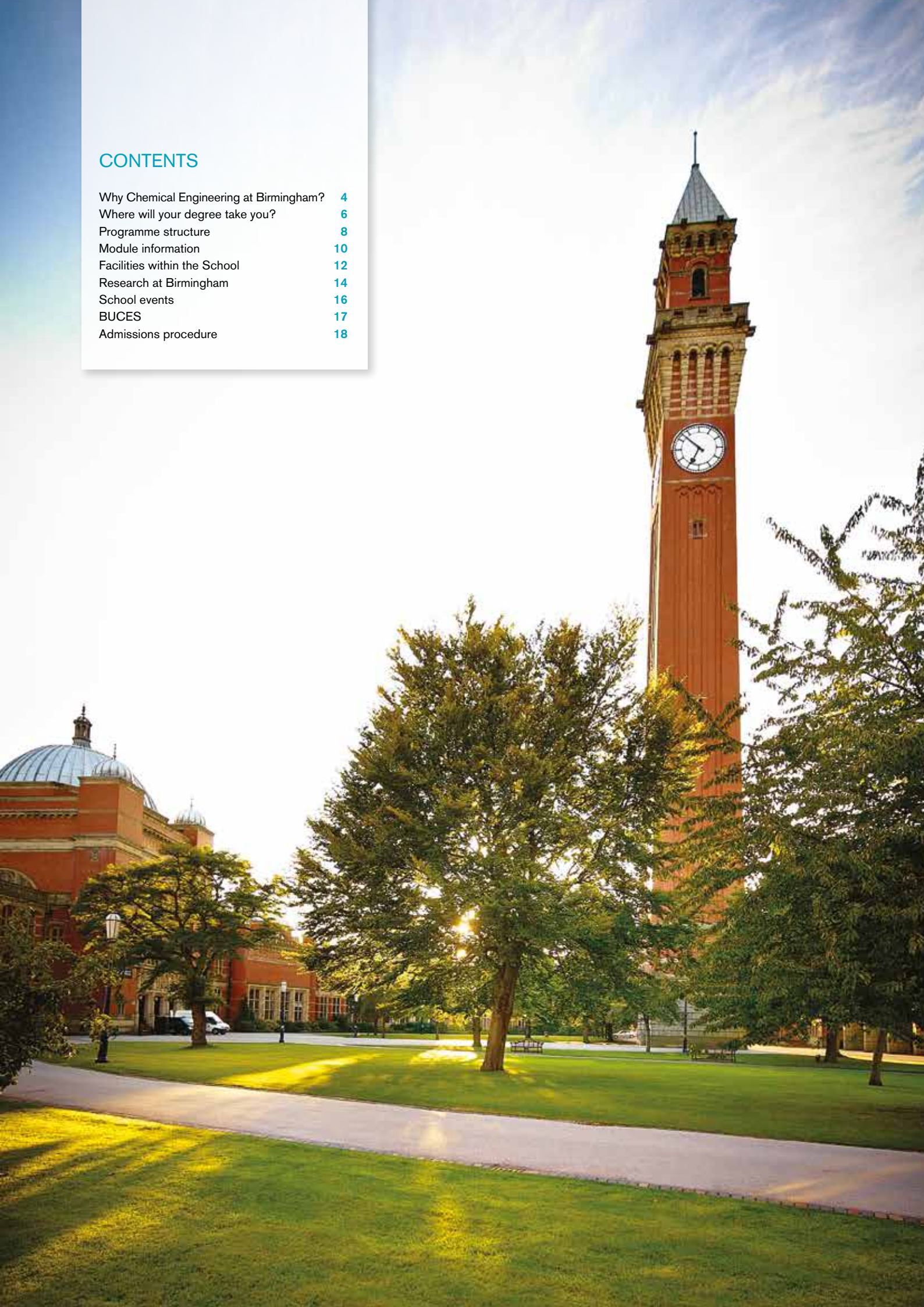


Why Chemical Engineering at Birmingham?

The School

- World renowned with over 40 members of academic staff and an average of over £10 million per annum in research income. You will be taught by experts in the field.
- Excellent industrial links with companies such as BP, ExxonMobil, Unilever, GSK and AstraZeneca who regularly come into the School to give guest lectures and provide careers advice.
- Working in partnership with our students to provide the best student experience and a high-quality intellectual environment for study. We act upon feedback through weekly Student Voice meetings and termly staff-student liaison meetings. You say, we do!
- An award-winning student society, Birmingham University Chemical Engineering Society (BUCES) hosts regular academic and social events throughout the year.
- World-class teaching and laboratory facilities including the £40 million Collaborative Teaching Laboratory (CTL), where we are using the latest educational technologies to reinvent laboratory classes and showcase the fundamental principles behind chemical engineering.
- Regular School events to promote inclusion including the Welcome Dinner, Coffee mornings, Summer BBQ, Staff-student night out, industrial dinner and a team-building course in the Lake District.
- A dedicated Industrial Tutor helps our students with sourcing placements, CV writing and interview preparation. Our tutor also works closely with industry to strengthen our links and build new relationships.
- A flexible portfolio – the structure of our course allows students to transfer between Chemical Engineering degree programmes.

The University

- An attractive campus – the Green Heart opens up the centre of campus for students, staff and the local community to enjoy. It provides a unique space for performances, socialising, meeting and studying, while opening up views across the whole campus.
- A wide range and convenient choice of accommodation – the University has hall accommodation to suit your needs and preferences, located in three easy to reach student villages, including the picturesque landscaped Vale site within easy walking distance of the main campus. Private accommodation for the later years is available in the surrounding areas.
- A state-of-the-art library in the heart of the campus, which has facilities such as computer suites, group study rooms, assistive technology booths, and flexible study spaces.
- A pioneering sports centre, which includes Birmingham's first 50-metre swimming pool, a large multi-sports arena, six glass-backed squash courts, a 10-metre climbing wall and five activity studios.
- An array of shops, bars and restaurants all conveniently located on campus within the Guild of Students and the University Centre.
- Our location offers the best of both worlds; a beautiful green campus situated just two miles away from the centre of Birmingham. Birmingham is also the only UK university to have its own railway station, meaning you can conveniently travel from campus to the city centre in just eight minutes!

4th
IN THE COMPLETE UNIVERSITY GUIDE 2019

5th
IN THE TIMES AND THE SUNDAY TIMES GOOD UNIVERSITY GUIDE 2019

HANNAH DAVISON,
MEng Chemical Engineering with Industrial Study

'I love studying chemical engineering, and I can't imagine a better place to do it than at Birmingham. It's a fun, exciting place to study, being a stone's throw away from the city centre, boasts a beautiful campus and provides an interesting course – it will set you up for anything you want to do after university.

One of the things that makes it so special is the people and the atmosphere. The atrium is a place where students and staff alike can have lunch, catch up and is a very relaxed place where you can approach academics with a problem or query. This friendly environment is also evident in lectures, with the academics' inspiring enthusiasm making it easy to concentrate and understand concepts.

I think at Birmingham they have really cracked the balance of the course, with your time split into lectures, tutorials, computer tutorials and labs. This provided me with an excellent all-round understanding, and I found it particularly interesting how all my modules were linked together. In the first year, they teach all the fundamental concepts and in the following years, module choices meant I could design my own degree with topics that I found intellectually stimulating. The whole degree is a good mix of project work and exams, helping me to hone a transferable skill set and great work ethic. The degree is, of course, challenging – but never enough to hinder progress and there are many ways to get help. Besides, who doesn't want a challenge!

Birmingham really stands out to me because of the help available to students. There's not only lecturers to ask and tutorials to attend when you're stuck on a problem – students in higher years also lend a hand. There are established weekly study groups called PASS (Peer Assisted Study Sessions) where third years like me give an hour of their time to first or second years to help explain difficult concepts, help with a problem and even give a bit of moral support. As a PASS Leader, I get a lot out of it too! Additionally, due to how close all the years are because of the School society, BUCES, everyone in the Chemical Engineering study spaces is more than likely to discuss a problem or answer a question, and is very friendly with advice. It genuinely feels like a family!

As one of the leading universities for Chemical Engineering, it follows that the research done here is just incredible. Lecturers and PhD students are experts in too many fields to mention here, but some of the main research focuses are medical research into implants and bone growth and energy storage. As someone passionate about energy conservation and switching to renewable fuels, the thought of studying somewhere at the forefront of energy storage research was too appealing to ignore. The cryogenic energy storage uses off-peak electricity to liquefy air, and once the demand increases, the air is vapourised and used to generate electricity, thus vastly increasing efficiency. The small process is right outside the School building, and reminds me every day just how exciting it is to study here. We get to be taught by lecturers who are literally at the forefront of their fields – what is more inspiring than that?

I mentioned previously the School society, BUCES. This is one of the things I love the most about Birmingham, as the social events, industrial help and opportunities to give feedback make sure the degree runs smoothly, that we have fun and, most importantly, are set up with a great job or placement. Thanks to the University's helpful industrial visits and emails to make me aware of opportunities, I'll be at Jacobs Douwe Egberts next year on a research and development placement making coffee. BUCES also organises a buddy system, whereby each first year is given second-year 'parents', which helped me so much with settling into university and having someone to turn to with questions. I enjoy every single bit of student life at Birmingham – especially chemical engineering.'

Where will your degree take you?

The future is uncertain and unpredictable, but wherever we face challenges, engineers are already working on the solution. Your degree will equip you with the technical, analytical and professional skills required to lead change and innovation in the future.

As a Birmingham graduate, you will have the knowledge and expertise to work in a number of sectors ranging from oil and gas to pharmaceuticals, from energy to finance. You will have the opportunity to tailor your degree based on your interests and skills. Due to the outstanding reputation of Birmingham, your degree will be valued both nationally and internationally and open up a host of opportunities to help you succeed in your chosen career path.

Our degrees will not only allow you to gain subject-specific skills such as advanced analytical skills, problem-solving and the subject knowledge you require, but will also give you confidence in leadership, teamwork, evaluation and communication. All of these skills are highly valued in the sector and give rise to a well-rounded graduate.

93%
GRADUATE EMPLOYABILITY*

3rd
MOST TARGETED UNIVERSITY BY LEADING EMPLOYERS
The Graduate Market in 2019, High Fliers Report

EXAMPLE EMPLOYERS	EXAMPLE CAREERS
BP	PROCESS ENGINEER
EXXONMOBIL	DESIGN ENGINEER
UNILEVER	ANALYTICAL SCIENTIST
GLAXOSMITHKLINE	FORMULATION ENGINEER
TATA STEEL	PRODUCTION ENGINEER
IMERYS	PATENT ATTORNEY
ASTRAZENECA	PROJECT MANAGER
PEPSICO	INVESTMENT BANKER
DOW CORNING	
EDF ENERGY	
BAE SYSTEMS	
AKZONOBEL	
JOHNSON MATTHEY	
PROCTER & GAMBLE	
CADBURY	

*Destination of Leavers from Higher Education 2016/17

GRACE HAYWARD,
MEng Chemical Engineering graduate

'Being on the Colas Rail UK Project Management Graduate Scheme has so far been a whirlwind adventure. It is a rotational scheme offering the opportunity to see its diverse business – Urban, Infrastructure and Rail Services. For the first 10 months of the scheme I was positioned within the Operations and Standards Team for Rail Services at Rugby Depot, learning the basics of Colas Rail train operations, completing works on a Single Passed At Danger (SPAD) and Incident Profile, and remedying start-up faults with the in house Route Learning and Retention System. I have now had the opportunity to spend 6 months on a secondment to Paris as part of the Urban Division to analyse the different workings between the business in the UK and France.'

MATT KEITH,
MEng Chemical Engineering graduate

'Since studying science and maths at GCSE level, I developed a passion for improving sustainability and mitigating the effects of climate change on a global scale. Studying Chemical Engineering at the University of Birmingham allowed me to develop the skills necessary to help tackle one of the most significant challenges facing us today. The undergraduate course here is very well supplemented in the first two years with a range of lab sessions, which allowed me to learn outside of lectures and tutorials. I thoroughly enjoyed the opportunity to gain technical skills and investigate some real Chem Eng principles in a welcoming, friendly environment. Over the course of my degree, I came to realise that I loved working in a lab, with people passionate about the same things I am. The hands-on experiences offered as part of the course, coupled with excellent facilities and approachable lecturers, steered me towards applying for a PhD, also at UoB!'

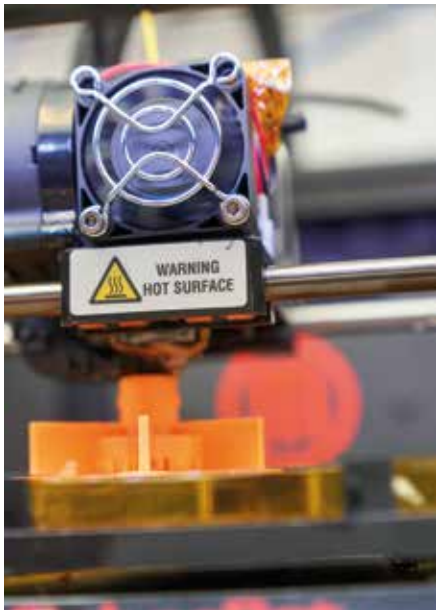
Programme structure

Chemical engineering benefits society and the environment by combining science, mathematics and engineering to develop new technologies, processes and products. As a chemical engineer, you can change the world by transforming ideas into products, processes and services in an ethical, safe and efficient way to solve future problems before they even arise.

Study

In the first and second years of the programme, you are taught the basic fundamental principles of chemical engineering. You will also begin to learn how a process affects product structure and how this in turn influences product function. IT and transferable skills are developed and experience is gained in the use of computer packages including Computer Aided Design (CAD), MATLAB and process simulation packages.

Our flexible degree courses are structured to bring together all these facets in order to give you a thorough understanding of chemical engineering, so that you are equipped to meet the challenges of your individual and group projects – as well as a life and career beyond university. Project work is highly valued by employers and is a thread that runs throughout our degree programmes in order to create well-rounded chemical engineers.



FACT

All our degree programmes are accredited by the **IChemE**

Degree options

Industrial Year

As a student at Birmingham, you will have the option to apply for an industrial placement if you wish to do so. A year in industry is an invaluable opportunity to take on a chemical engineering role within a company, either in the UK or abroad. You will have the opportunity to apply the theoretical knowledge of your degree course to real engineering problems in a professional environment. We will be in touch with you throughout the year, and our Industrial Tutor will visit you while you are on placement.

Students often return from an industrial placement with a new-found confidence in their knowledge and skills. The year will give you a clear idea of what you would like to do in the future, as well as building on your professional network. Our excellent industrial links will mean that you are aware of all the latest openings, and we will guide you through the application process through CV clinics and mock interviews.

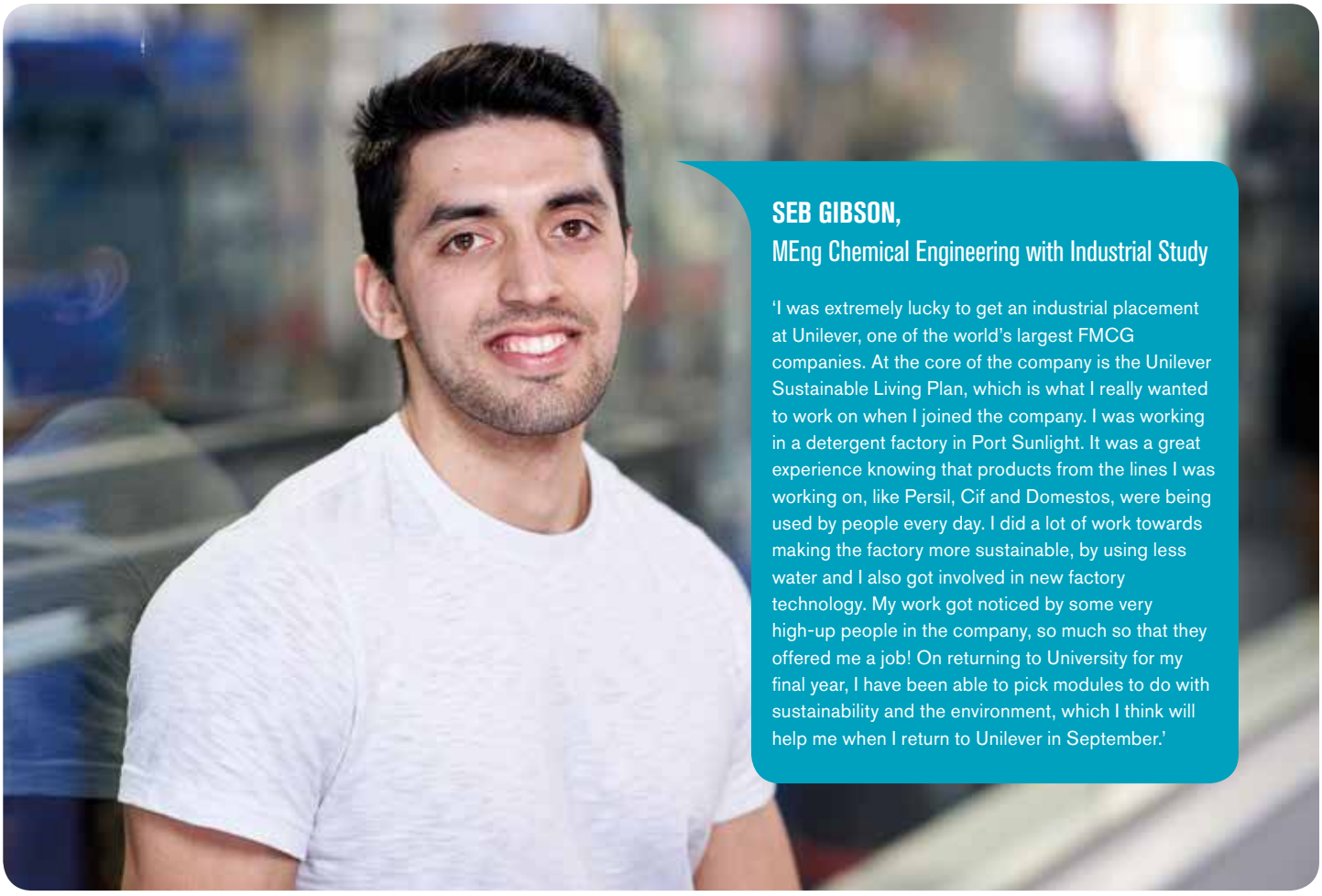
International Year

We also offer degree courses that allow you to study at an international university in your third year of study. The most popular destinations are Melbourne, McGill (Montreal), Singapore and Iowa. This is a fantastic opportunity for students to travel the world and build a professional and social network. Our students find this to be a great talking point in job interviews when they return.

CHEMICAL ENGINEERING FOUNDATION YEAR

If you would like to study Chemical Engineering at Birmingham but do not possess the required qualifications for BEng and MEng entry, we offer a Chemical Engineering Foundation Year.

More information available at **www.birmingham.ac.uk/chemical-engineering**



SEB GIBSON,
MEng Chemical Engineering with Industrial Study

'I was extremely lucky to get an industrial placement at Unilever, one of the world's largest FMCG companies. At the core of the company is the Unilever Sustainable Living Plan, which is what I really wanted to work on when I joined the company. I was working in a detergent factory in Port Sunlight. It was a great experience knowing that products from the lines I was working on, like Persil, Cif and Domestos, were being used by people every day. I did a lot of work towards making the factory more sustainable, by using less water and I also got involved in new factory technology. My work got noticed by some very high-up people in the company, so much so that they offered me a job! On returning to University for my final year, I have been able to pick modules to do with sustainability and the environment, which I think will help me when I return to Unilever in September.'

PAYAL THADANI MERANI,
MEng Chemical Engineering with International Study

'A year abroad will make you more employable – a phrase that many of you will hear at some point but only few seize the opportunity. I spent my third year in Malaysia studying at the University of Nottingham's overseas campus. It was a year full of new, exciting experiences – from attending a Multicomponent Separations lecture to swimming with bioluminescent plankton in Cambodia. I was initially anxious about traveling halfway across the world. However, I had nothing to worry about. I made a group of lifelong friends that didn't allow me to feel homesick for a single moment and later joined me on my travels around Southeast Asia. Now that I have returned to Birmimgham, I am so much more confident in everything I do, from group projects to job interviews, thanks to the year that I stepped out of my comfort zone.'

Module information

Our degrees are designed to teach you the core knowledge you require as a chemical engineer, but to also allow you to choose optional modules in order for you to tailor your degree to your interests and skills.

YEAR 1 AND 2

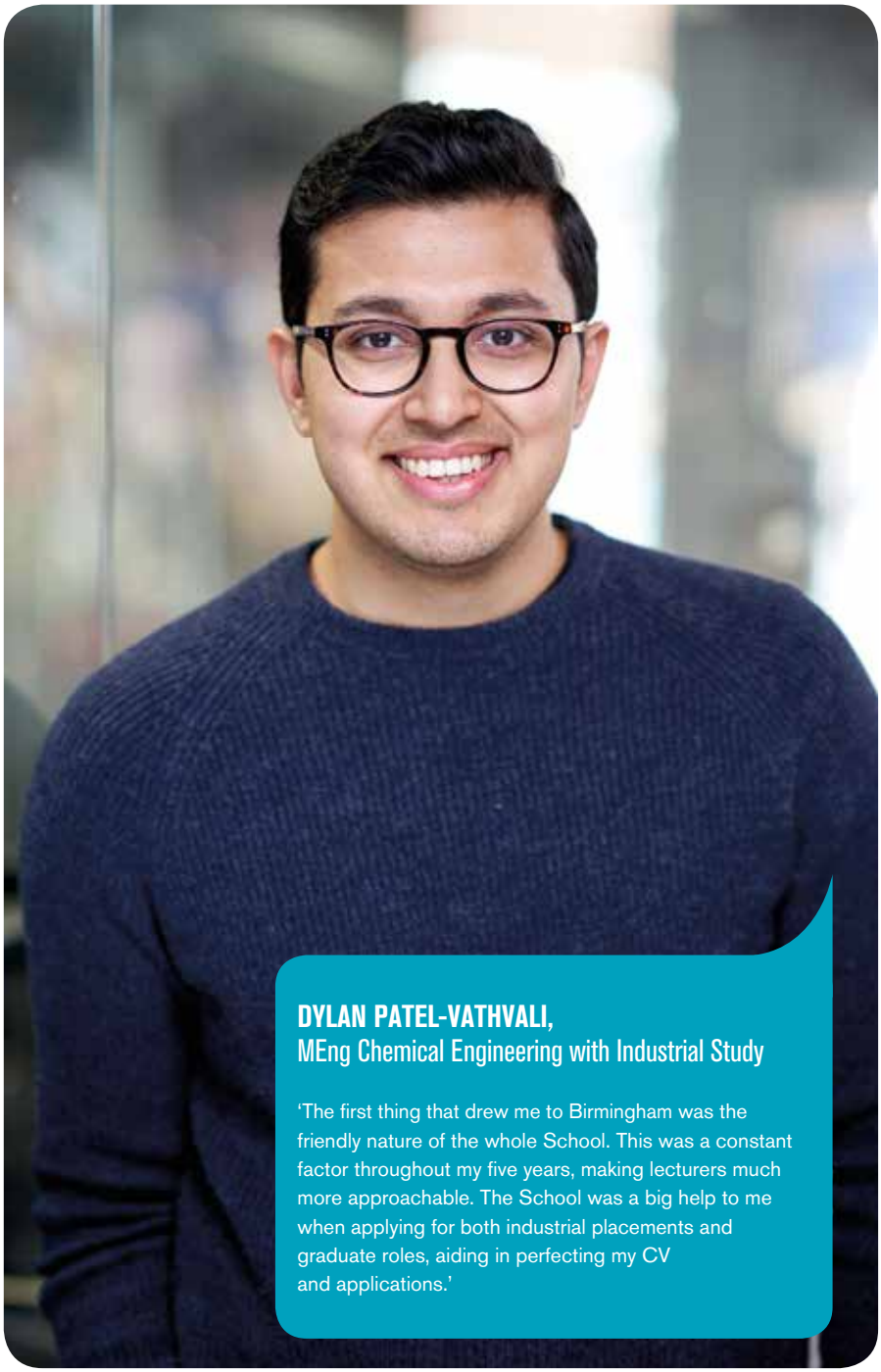
In the first and second years of the programme, the basic fundamental principles of chemical engineering are taught. This covers transport phenomena (how and why materials and heat move), flowsheeting (how processes are analysed), design and operation of chemical reactors and other unit operations and the safe operation and control of these processes.

YEAR 3

All students undertake a Design Project to design a specific and realistic chemical process, championed by an industrial partner. Students work in small teams over two semesters and are given the opportunity to make site visits and quiz the industrial champion as the design progresses. The Design Project gives students the opportunity to demonstrate their chemical engineering skills as they take ownership of the entire design process, coming up with their own solutions to real and complex problems. In addition, options from a mixture of our four themes of Industry, Energy, Healthcare and Formulation can be taken.

YEAR 4

A further set of in-depth options from within the four themes of Industry, Energy, Healthcare and Formulation are selected to allow you to specialise further in aspects of the course that interest you. You will undertake a Research Project, working with the research groups within the School to gain an appreciation of how the subject is developing at the cutting edge.



DYLAN PATEL-VATHVALI,
MEng Chemical Engineering with Industrial Study

'The first thing that drew me to Birmingham was the friendly nature of the whole School. This was a constant factor throughout my five years, making lecturers much more approachable. The School was a big help to me when applying for both industrial placements and graduate roles, aiding in perfecting my CV and applications.'

ISABELLA PRATT,
MEng Chemical Engineering

'Chemical Engineering at the University of Birmingham is exciting and I have had the chance to meet inspiring, new people through group projects. In addition to the fundamentals, we are taught modules on the research fields of the moment by world-leading specialists, giving us skills and knowledge that will set us up for success in the working world after university.'

Year 1	Year 2	Year 3	Year 4
Chemistry and Materials	Reactors, Catalysis and Thermodynamics	Design Project	Advanced Transport Processes
Modelling Concepts and Tools	Mass, Heat and Momentum Transport	Advanced Reactors and Thermodynamics	Research Project
Process Design and Analysis	Process Integration and Unit Operations	Multiphase Systems	**Optional modules from key themes***
Introduction to Transport Phenomena	Computing for Chemical Engineers	**Optional modules from key themes***	
Reaction, Equilibria and Thermodynamics	Product Design Exercise		
Labs and Mastery	Process Systems and Principles of Process Control		
	Sustainable Process Engineering		

These are current modules and may be subject to change. For the most up-to-date list, please visit: **www.birmingham.ac.uk/chemical-engineering**

*Years 3 and 4 optional module key themes:
Formulation Engineering
Healthcare Technologies
Energy Engineering
Industry

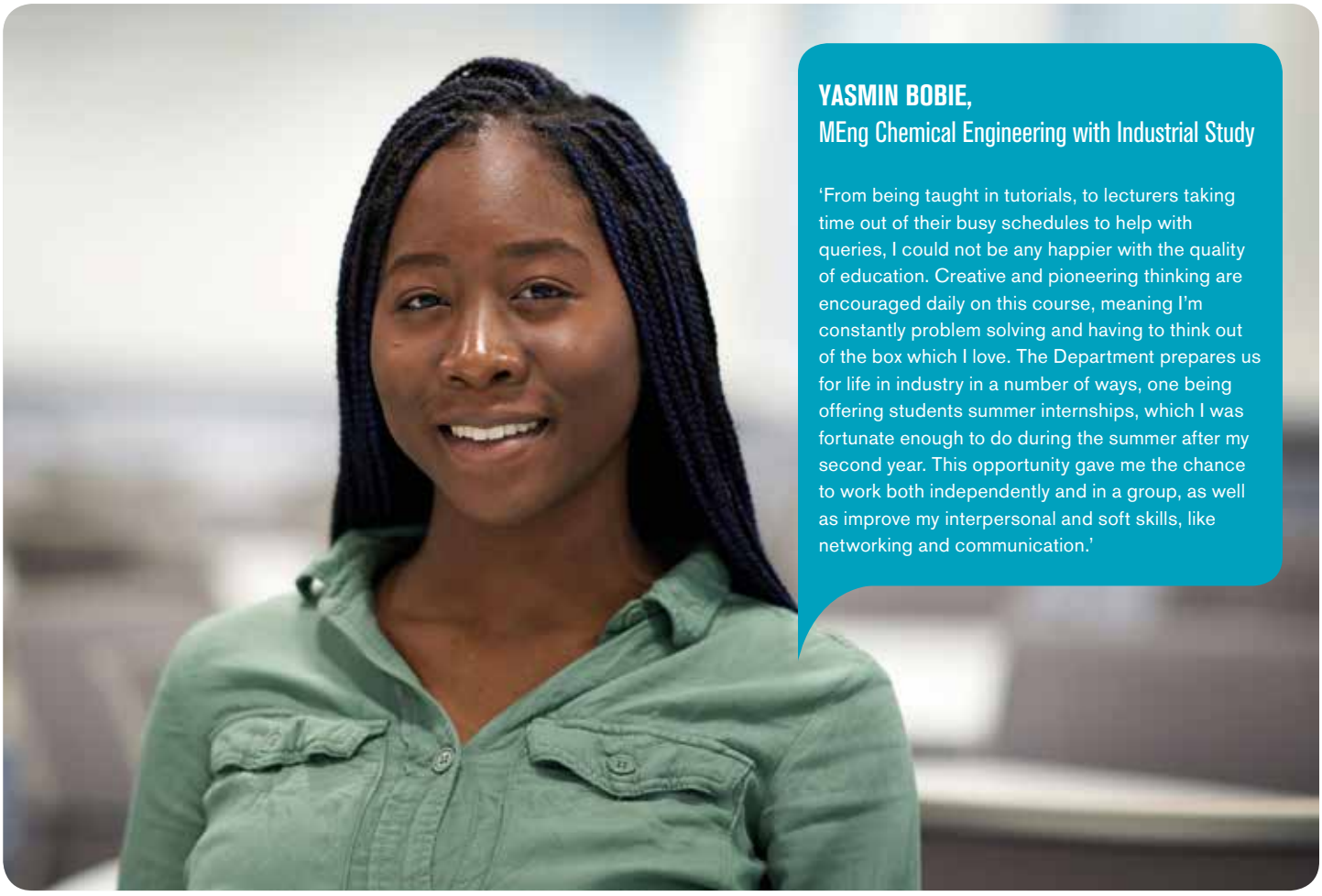
Facilities within the School

As a Birmingham undergraduate, you will have access to state-of-the-art study spaces, teaching rooms, computer suites and laboratory space in order to ensure that you can reach your full potential.

The Collaborative Teaching Laboratory is now complete and our students have already started their laboratory classes in the new facilities. This £40 million investment by the University is equipped with state-of-the-art, industry-standard equipment where students have the opportunity to apply their theoretical knowledge to practical problems; you will be able to explore fluidised bed reactors, distillation columns and stirred tanks. We are using the latest educational technologies to reinvent practical classes allowing our students to benefit from transformational teaching in a space designed to encourage and facilitate collaborative and interdisciplinary working. Our goal is to equip our students with the skills and confidence to make an impact in industry or academic research.

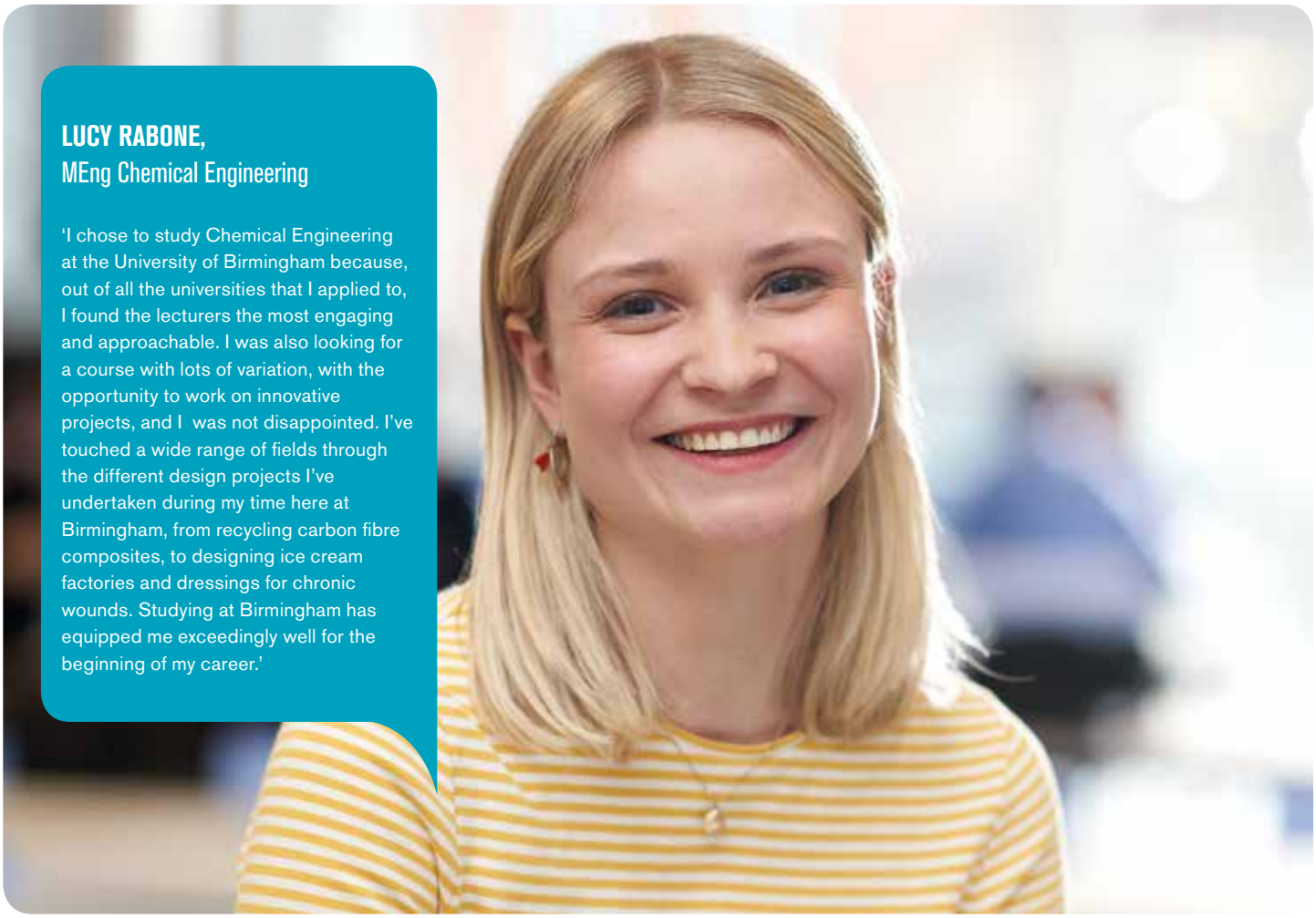
Within the School, we have the Garner suite, which is equipped with multiple wall-mounted computer stations allowing you to carry out group work in comfort. The room is equipped with a number of networked computers with all the software you require in order to study. Furthermore, we have a meeting room you can book where you can practise presentations or meet with your peers to discuss your research or design project.

The School has great social spaces, including our own coffee shop and atrium area where students and staff alike join for lunch. This is a great space to relax after lectures or meet with peers to discuss coursework and projects. The space is also used as an exhibition space, and for BUCES events.



YASMIN BOBIE,
MEng Chemical Engineering with Industrial Study

'From being taught in tutorials, to lecturers taking time out of their busy schedules to help with queries, I could not be any happier with the quality of education. Creative and pioneering thinking are encouraged daily on this course, meaning I'm constantly problem solving and having to think out of the box which I love. The Department prepares us for life in industry in a number of ways, one being offering students summer internships, which I was fortunate enough to do during the summer after my second year. This opportunity gave me the chance to work both independently and in a group, as well as improve my interpersonal and soft skills, like networking and communication.'



LUCY RABONE,
MEng Chemical Engineering

'I chose to study Chemical Engineering at the University of Birmingham because, out of all the universities that I applied to, I found the lecturers the most engaging and approachable. I was also looking for a course with lots of variation, with the opportunity to work on innovative projects, and I was not disappointed. I've touched a wide range of fields through the different design projects I've undertaken during my time here at Birmingham, from recycling carbon fibre composites, to designing ice cream factories and dressings for chronic wounds. Studying at Birmingham has equipped me exceedingly well for the beginning of my career.'

Research at Birmingham

Chemical Engineering at Birmingham combines teaching from lecturers who are global experts in their fields, together with leading-edge teaching facilities and laboratories to enhance the learning experience for our students. As an undergraduate at Birmingham, you will be able to draw upon the wealth of research expertise that resides in the School.

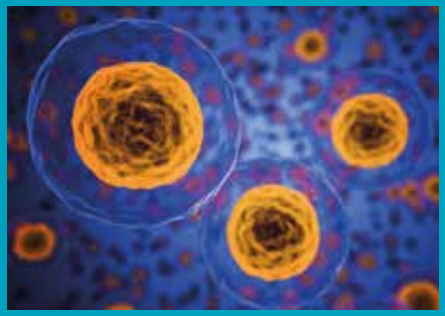
Birmingham has one of the largest concentrations of chemical engineering expertise in the UK, meaning our research is of the highest quality. Eighty-seven per cent of our research was rated as world-leading or internationally excellent in the Research Excellence Framework (REF2014). The School of Chemical Engineering is at the forefront of solving global problems. Our internationally recognised research is addressing some of the world's biggest challenges such as the future energy crisis, advancing healthcare technologies and manufacturing healthier food.

Our aim is to ensure that you graduate with knowledge in the most cutting-edge areas and are able to translate your knowledge into your future career path. You will learn in an intellectually stimulating environment where you will gain a thorough understanding of basic principles of chemical engineering and how it relates to the real world.

If you choose the MEng Chemical Engineering programme, you will undertake a research project in your final year of study where you will be immersed in one of the active research groups within the School. This year will give you an opportunity to work alongside PhD students and research associates on research that will impact on the development of future processes and products. Our main research themes are Formulation Engineering, Energy Engineering and Healthcare Technologies.

FORMULATION ENGINEERING

The **Centre for Formulation Engineering** in the School, led by **Professors Peter Fryer** and **Mark Simmons**, involves the development of solutions to the design and manufacture of formulated products in the food, pharmaceutical, biotechnological, fast-moving consumer goods and fine chemicals sectors. In these sectors, it is vital to get the right molecule to the right place at the right time, for example, to treat a disease using drugs, improve the effectiveness of a catalyst, make a food taste more delicious or ensure your hair feels good after washing. Formulation Engineering is tackling issues affecting our quality of life; such as development of more economical processes to reduce the environmental burden (such as removal of water by making more concentrated products and optimising in-plant cleaning and hygiene processes) and longer-lasting, healthier food due to the right combination of chemistry, ingredients and processes.



ENERGY

Improving quality of life demands the supply of increasing amounts of energy and consumer chemicals, while at the same time global warming has become a major cause for concern. The Energy research theme addresses the challenges of replacing the current reliance on carbon-based fuels. The **Birmingham Centre for Energy Storage**, led by **Professor Yulong Ding** is researching into thermal and cryogenic energy-based technologies. The **Birmingham Centre for Fuel Cell and Hydrogen Research** led by **Professor Robert Steinberger-Wilckens** is examining ways in which the hydrogen economy could deliver a series of energy solutions. Together with appropriate policy, our energy research is playing an important role in delivering integrated energy systems into cities, transport and beyond.

HEALTHCARE TECHNOLOGIES

The University of Birmingham's experts in chemical engineering, biomedical science, computer science, applied mathematics, chemistry and physics have been brought together in the **Healthcare Technologies Institute**. Led by **Professor Liam Grover** with **Professors Alicia El Haj** and **Anthony Metcalfe**, our researchers are working together to advance new technologies and treatments that encourage better tissue healing and rehabilitation tools to ensure people live longer, healthier and happier lives. The development and first in-man trial of a new anti-scarring dressing is one of the first research projects within the Scar Free Foundation Centre for Conflict Wound Research in Birmingham. Research in **Nanoengineering and Surface Chemistry**, led by **Professor Paula Mendes** focuses on detecting cancer early to improve long-term outcomes as well as aiding the development of treatment plans.

Curcumin and PVP pharmaceutical formulations
(Image by Ravenna Lessa Matos)

School events

We are a very social School, and as a Birmingham student you will be immersed in School life through the range of events organised by both the School and student society.

We regularly have representatives from companies such as Unilever, BP, ExxonMobil, GlaxoSmithKline and Johnson Matthey, who visit the School to give guest lectures and career talks. This is a great opportunity for our students to speak to industry and gain an insight into what they want from their future employees.

As a school we operate a PASS scheme, which involves higher-year students helping first-year students with their study across an academic module. It is successful because it is **student-led**. PASS offers a safe, friendly space to help students enhance their understanding of the subject matter of their course through collaborative learning as well as helping to adjust to University life.

The School and BUCES arrange many social events including the end-of-year BBQ and staff-student night.

HARRY RICHARDSON,
MEng Chemical Engineering

'The degree programme at Birmingham has provided me with knowledge of a wide range of different subjects, from maths to metallurgy, which has helped keep the course engaging. Projects carried out during my degree bring all these subjects together and it's incredibly rewarding to see how the things I've learnt in lectures apply to real-world situations.'

BUCES

The Birmingham University Chemical Engineering Society (BUCES) is our award-winning student society – run by students, for students. BUCES is extremely active and offers something for everyone; fantastic socials, networking events, sports tournaments, careers advice and charity fundraising. From Fresher's week to graduation, BUCES is there to support our students and enable them to really make the most of their time at Birmingham.

Joining BUCES is the best way to begin your journey as a new member of the School of Chemical Engineering. Everyone is welcome to join, no matter what your interests are. The Society runs regular socials including GoKarting and Laserquest and there are ample opportunities to catch up with your course mates outside of lectures. The trip to Coniston Water at the start of term is the perfect event for new students, and helps them get to know each other and their lecturers through team-building activities.

BUCES' CALENDAR HIGHLIGHTS:

- Fresher's Welcome Dinner
- Coniston Trip
- Industrial Dinner
- Winter Ball
- Frank Morton Inter-University Sports Day
- Birmingham Half-Marathon
- End of Year Trip

ALLAN, MEng Chemical Engineering with International Study

'A great place to socialise and make friends! The society is super friendly and frequently holds social events that are suitable for everyone. Opportunities for networking isn't an issue as companies are in on a daily basis.'

DANIIL, MEng Chemical Engineering with Industrial Study

'BUCES is a way to actively drive the change you wish to see in your learning environment; an opportunity to leave your mark, and to have fun doing it. It is also a way to extend your engagement beyond the purely academic interactions – participating in the annual Frank Morton sports day event is an excellent way to really get to know your course mates.'

Sport plays a huge role in BUCES. Chemical Engineering sports teams are often combined with the other engineering/science disciplines and compete in the Intra-league against other schools and societies. A standout event in the BUCES calendar is Frank Morton, when Chemical Engineering students from across the UK descend upon one city for a day of sporting events and friendly rivalry. Birmingham has won the tournament more than any other university and have been the reigning champions for the past five years!

The School of Chemical Engineering has extensive links with industry, so there are ample opportunities to network with some very influential people. BUCES organises presentations from company representatives and application days directly aimed at Chemical Engineering students. Every year, BUCES also puts on an Industrial Dinner, where students get the chance to mingle with company representatives looking to recruit – while enjoying a sophisticated dinner in the process. Many of our students have secured placements, or even jobs, following the connections they make on the night.

MARIAM, MEng Chemical Engineering with Industrial Study

'BUCES provides chemical engineering students with a lot of different and fantastic opportunities whether that be social or industrial. The Industrial Dinner is a great way for students to network and get a feel for what it's like to be a young chemical engineer.'

Admissions procedure

Due to the flexible range of courses the School of Chemical Engineering offers, you can tailor the course you study to suit your interests and goals. Eligible BEng students can transfer to the MEng courses and both the Year in Industry and Year Abroad options are also available for students to switch to.

How to apply

You will need to submit an application through UCAS to be considered for study and use the appropriate UCAS code from the table. Please remember to provide full information on your education history when you apply.
www.ucas.com

If you are applying from a UK school or college, your teacher or careers advisor will be able to support you with your application and guide you through the process.

FACT

If you are a Year 12 or 13 student you could join us via the University's Pathways to Birmingham Scheme.
www.birmingham.ac.uk/pathways

Programme	UCAS code	Duration (Years)
Chemical Engineering BEng	H800	3
Chemical Engineering MEng	H810	4
Chemical Engineering (International Study) MEng	H801	4
Chemical Engineering with Industrial Study BEng	HV10	4
Chemical Engineering with Industrial Study MEng	H802	5
Chemical Engineering with International and Industrial Study	HW10	5
Chemical Engineering with Foundation Year (BEng)	H892	4

Essential information/entry requirements

- A levels – A*AA/AAAA.
- A level Mathematics and Chemistry is required. If not taking the M1 module, AS level Physics should be offered.
- General Studies and Critical Thinking are not considered.
- IB – 766 at Higher Level including Mathematics and Chemistry at Higher Level grade 6 and 32 points overall (we will consider Standard Level Mathematics grade 7).
- We accept deferred entry, please contact us if you would like to defer your entry and we can make the necessary arrangements.

Alternative qualifications

Qualifications under other examinations systems may be considered. If you are unsure if your qualifications meet our entry requirements, please contact **ug-admis-chem-eng@bham.ac.uk**

International applicants who do not meet our requirements for direct entry onto our courses may wish to study on the Foundation Pathway. Further details can be found on our website at: **www.birmingham.ac.uk/International/foundation-pathways**

Specific programme features

Chemical Engineering with International Study
Students spend an academic year (Year 3) outside of the UK studying at a prestigious university either in an English-speaking country, such as Brisbane, Melbourne, McGill (Montreal), Singapore or one of the Universitas 21 group; or at a non-English speaking University such as Madrid, Rome, Berlin or Nancy.

Chemical Engineering with Industrial Experience

Students on this programme can spend up to a year in industry at the end of their second or third years. Major multinational companies such as Shell, ExxonMobil, BP, Mondelez, Unilever, Procter & Gamble, PepsiCo, EDF, GlaxoSmithKline, AstraZeneca and British Sugar, businesses in the City as well as smaller companies such as Aspentech, CalGavin and Croda currently offer industrial placements.

Fees and funding

We charge an annual tuition fee. For the most up-to-date information, please visit **www.birmingham.ac.uk/undergraduate/fees** Funding opportunities are available.

UK/EU Student Loans

A tuition fee loan is available from the government via the Student Loans Company (SLC) to all UK and EU undergraduate students, giving you the opportunity to borrow up to the full cost of your tuition fees.
www.slc.co.uk

Loans for international students

The University of Birmingham administers loans for eligible students from America and Canada. Students from other countries should check with their government whether it provides loans for study in the UK and the application process.

Scholarships

UK/EU

We offer *High Achievers Entrance Scholarships* worth £1,000 to those candidates who achieve A*A*A (with both A*s being obtained in Maths and Chemistry) in their A levels and who have chosen Birmingham as their firm choice through UCAS.

International

All eligible students will receive an *Achievement Scholarship* or *Excellence Scholarship* of £1,500 or £3,000, respectively.

Achievement Scholarships are worth £1,500 and are awarded to those who achieve A*AA at A level or equivalent. Excellence Scholarships are worth £3,000 and are awarded to those who achieve A*A*A at A level or equivalent.

A wide range of international qualifications will be considered – please contact the admissions tutor to find out the criteria that would apply in each case. **www.birmingham.ac.uk/chem-eng-scholarships**

BP Scholarships

Launched in 2012, the BP Scholarships are intended to encourage and support students with a passion for certain subjects. BP will offer scholarships to up to ten students, either UK/EU or International, from the University of Birmingham for 2020. Each scholarship is worth up to £9,000, with scholars receiving £3,000 from their second year for the duration of their degree (up to four years).

LEARN MORE

Please contact us for further details or with any questions you may have.

Admissions Tutor: Dr Anita Ghag
Tel: +44 (0)121 414 5333
Email: ug-admis-chem-eng@bham.ac.uk
Twitter: **@ChemEngBham**

Athena SWAN Bronze Award
EU GENDER CHARTER

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

Please note the information in this brochure is correct at time of publication but may be subject to change (June 2019).

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