



QUEEN'S
UNIVERSITY
BELFAST

FACULTY OF
ENGINEERING
AND PHYSICAL
SCIENCES

EPS SUMMER SCHOOL 2024

MONDAY 22 JULY – FRIDAY 16 AUGUST





★ THE SIR WILLIAM WALLACE HALL ★



QUEEN'S
UNIVERSITY
BELFAST

SHAPING A BETTER WORLD SINCE 1845



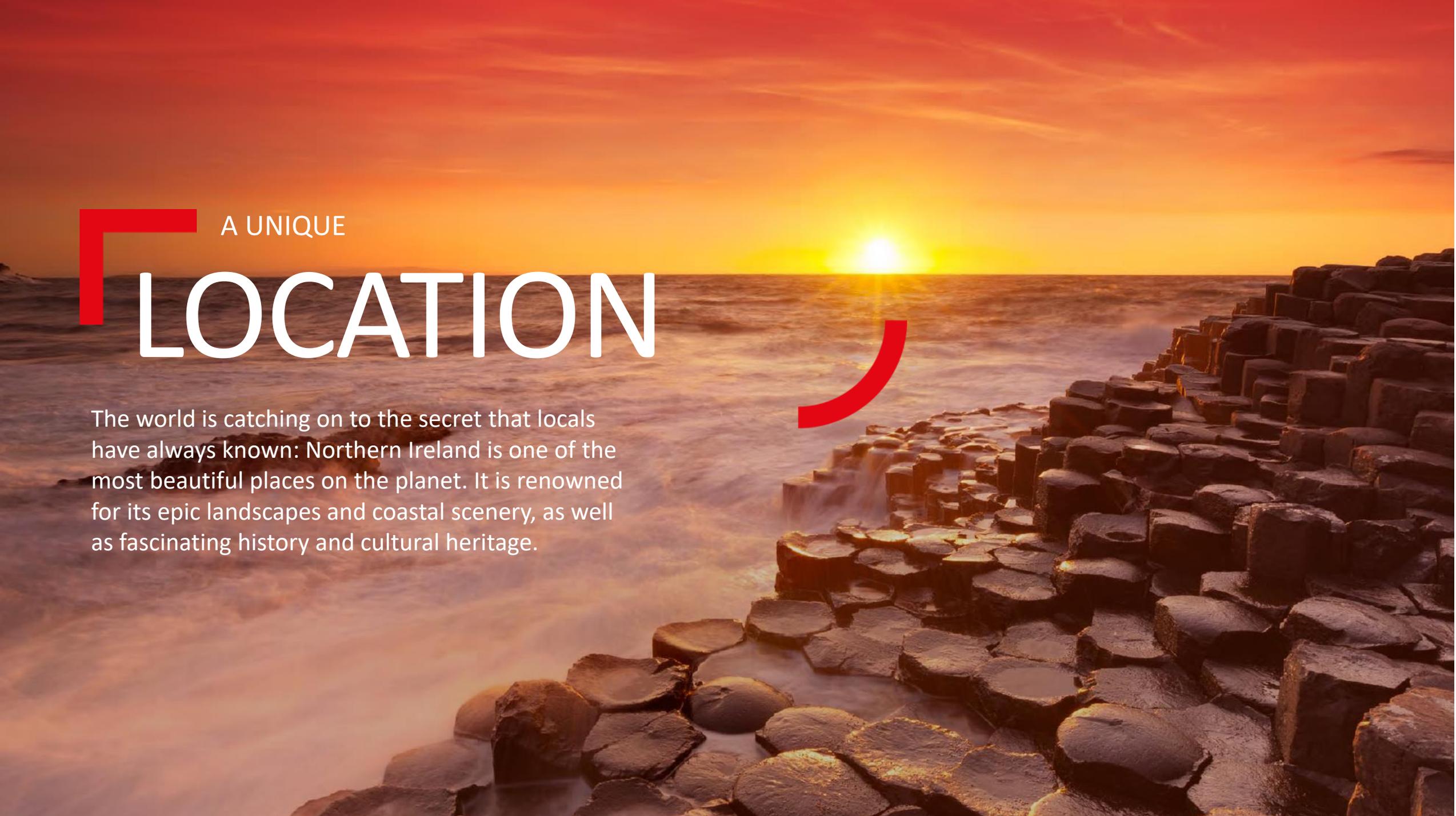
INTERNATIONALLY RESPECTED

Home to over 3,000 International
students from 85 countries

Member of the Russell Group
(Alongside Cambridge, Oxford
and Imperial College London)

9th oldest university in the
UK Est 1845 (Complete
University Guide 2021)





A UNIQUE

LOCATION

The world is catching on to the secret that locals have always known: Northern Ireland is one of the most beautiful places on the planet. It is renowned for its epic landscapes and coastal scenery, as well as fascinating history and cultural heritage.



AFFORDABLE

STUDENT LIVING

Belfast has the lowest cost of living for students anywhere in the UK so your money goes further. Our international students are often surprised by the high quality of life they can enjoy in Belfast with a modest budget.



QUEEN'S UNIVERSITY BELFAST

FACULTY OF
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CHOICE OF SIX UNIQUE PROGRAMMES

SCHOOL OF
CHEMISTRY
AND CHEMICAL
ENGINEERING

SCHOOL OF
MATHEMATICS
AND PHYSICS

SCHOOL OF
NATURAL AND
BUILT ENVIRONMENT

SCHOOL OF
ELECTRONICS,
ELECTRICAL
ENGINEERING AND
COMPUTER SCIENCE

SCHOOL OF
MECHANICAL
AND AEROSPACE
ENGINEERING

SCHOOL OF
PSYCHOLOGY

Module details will be finalised in March but the following provides some information on previous modules.



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CHEMISTRY AND CHEMICAL ENGINEERING

Our approach is unique. By bringing together chemists and chemical engineers to work in partnership, we offer a unique learning environment. One which spans from education and research to real solutions for global challenges.

SCHOOLS



We combine multiple disciplines to take care of everything from discovery to process.



Our employability rates are high due to industry links and industrial placements



We create big impact for society, students and businesses through research and development

CHEMISTRY AND CHEMICAL ENGINEERING

MODULE:

Solving Global Challenges with Chemistry and Chemical Engineering (CCE)

LEARNING OUTCOMES:

- Gain knowledge of sensors in disease diagnosis, next generation of antibiotics, computer-aided molecular engineering and AI accelerated rational design
- Gain knowledge of design, preparation of functional materials and their applications in sustainable development such as renewable energy, energy storage, CO₂ capture/conversion
- Gain critical thinking, problem-solving, teamwork skills from group-based workshops/mini-projects
- Gain experience via practical labs, computational workshops, VR lab
- Enhance oral presentation skills

Accredited by:



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MATHEMATICS AND PHYSICS

Using the power of Mathematics and Physics, we provide the essential building blocks needed to interpret and harness the environment around us. With the development of unique problem solving abilities, you can make a real difference in the world.

SCHOOLS



Our world-renowned experts collaborate globally to provide students with the foundation of all knowledge



We give students the knowledge to tackle and solve some of the world's toughest challenges



Our research-driven teaching encourages curiosity providing the building blocks for career success

MATHEMATICS & PHYSICS

MODULE:

Simulation, Physical and Mathematical Analysis

LEARNING OUTCOMES:

- Explore a variety of topics, ranging from machine learning, mathematical analysis to chemical physics
- Gain knowledge of some applications in science and technology, such as photons, particles, nuclear decay and nuclear fusion
- Sharpen your mathematical analysis skills and deepen your understanding of convergence of series
- Understand the basics of how machine learning can be used for the properties of molecular systems, incorporating symmetry
- Understand different types of observations of the Sun from space at different wavelengths, and the impacts of solar activity on our planet



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MECHANICAL AND AEROSPACE ENGINEERING

We provide a hands on learning experience that students need to succeed in industry. With exceptional facilities, enhanced employability opportunities and dedicated careers resources, we give students the skills the need to make a positive difference in the world.

SCHOOLS



We provide hands on project based learning in exceptional facilities so that we can put theory into practice



We have the power to create real impact on the world around us and our students are at the heart of it



We give our students the best chance of employability with leadership training and industry links

MECHANICAL AND AEROSPACE ENGINEERING

MODULE:

Project on Mechatronics and Robotics

LEARNING OUTCOMES:

Understanding general principles of Mechatronics as an interdisciplinary topic between Mechanical Engineering, Electrical Engineering and Computer Science

Gain knowledge of basic terms in Dynamic Systems, including Degrees of Freedom, Motions, Velocity, Accelerations, Forces, Torque and Gears

Gain basic knowledge in electrical devices such as sensors and motors

Get experience in use of computer software to train Robots



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NATURAL AND BUILT ENVIRONMENT

We are making a real difference to the world around us. With access to multi-disciplinary experts, providing an intimate learning experience, we are unlocking the skills needed to shape and secure the environment for the future.

SCHOOLS



We provide hands-on learning experiences in classes where everyone gets the chance to know each other.



We have a strong reputation due to our high rankings and dedicated staff and students



We provide a collaborative approach. Working from the past to the future of the natural and built environment

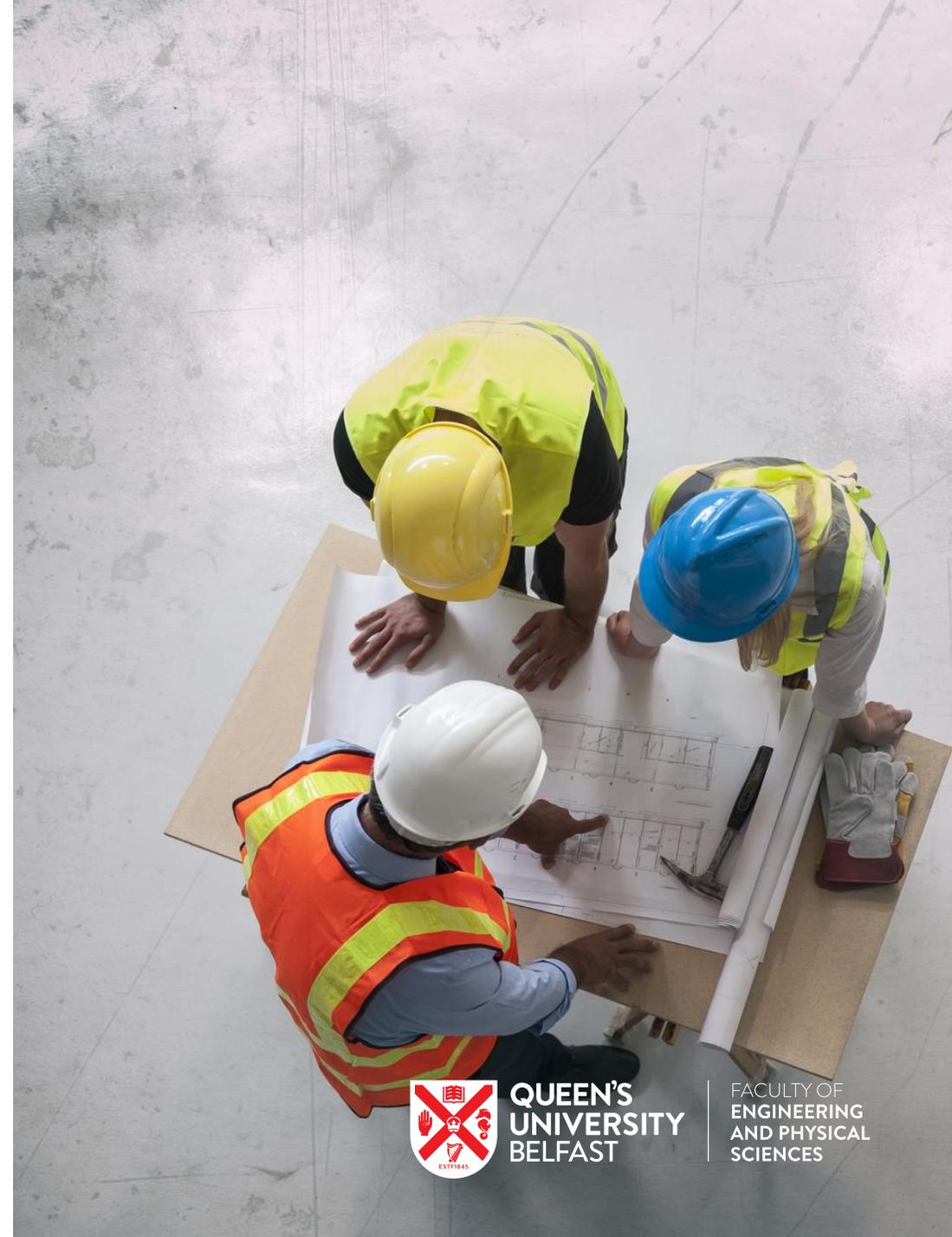
CIVIL ENGINEERING

MODULE:

Building for Net Zero: from conception, to design to build.

LEARNING OUTCOMES:

- Understand the impact of Civil Engineering on the built environment and our role/responsibility to de-carbonisation construction
- Develop an understanding of the basic principles of structural design, load paths for simple structures and deploy this to develop an outline design concept
- Develop engineering skills in drawing (hand drawing and CAD) and from this create a model structure for testing (make-break)
- Gain critical thinking, problem-solving, teamwork skills from group-based workshops/mini-projects
- Enhance oral presentation skills



PSYCHOLOGY

We explore the diversity of the human mind and behaviours. By providing a high level of student support, research-led learning and a focus on diversity, equality and inclusion, we create minds that are open and ready to address the biggest challenges we face in society.

SCHOOLS



We take the time to support our students at every stage of their journey



We focus on Diversity, Equality and Inclusion in all our research and teaching



We showcase and provide a breadth of opportunity and transferable skills for our students

PSYCHOLOGY

MODULE:

Applying Psychology in Everyday Life: Mental health and wellbeing

LEARNING OUTCOMES:

Understand foundational and emerging questions related to health and wellbeing, drawing on Social, Clinical Health, Cognitive, Forensic, Sport and Occupational Psychology

Gain knowledge of methodological and ethical issues relevant to the study of health and wellbeing

Design practical elements of a research project: qualitative and quantitative research methods, experimental design, ethics applications, questionnaire design, and using online recruitment systems

Accredited by:



The British
Psychological Society
Accredited



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ELECTRONICS, ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

We help curious minds spark excellence in education and society. By providing best in class facilities, a highly supportive learning environment and exceptional industry links, we open doors for our students.

SCHOOLS



We keep our finger on the pulse of innovative technologies and student employability



An incredibly supportive learning environment with purpose built facilities



We are highly accredited due to our teaching excellence and investments in technology

ELECTRONICS, ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

MODULE:

Microcontroller Programming (Arduino/Tinkercad Simulation)

LEARNING OUTCOMES:

Gain an introduction to microcontroller programming using 'C'

Understand the basic principles of interfacing digital and analogue circuits to microcontrollers

Learn the basic principles of serial communications

Practice practical analogue signals for microcontrollers

Accredited by:  The Institution of
Engineering and Technology



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PROFESSIONAL SKILLS & CAREER DEVELOPMENT

An additional module will be delivered designed to teach students professional skills and help them develop their career options

LEADERSHIP

Explore the challenges faced in a climate of constant change

ENTREPRENEURSHIP

Develop your enterprise skills and hear from our young entrepreneurs

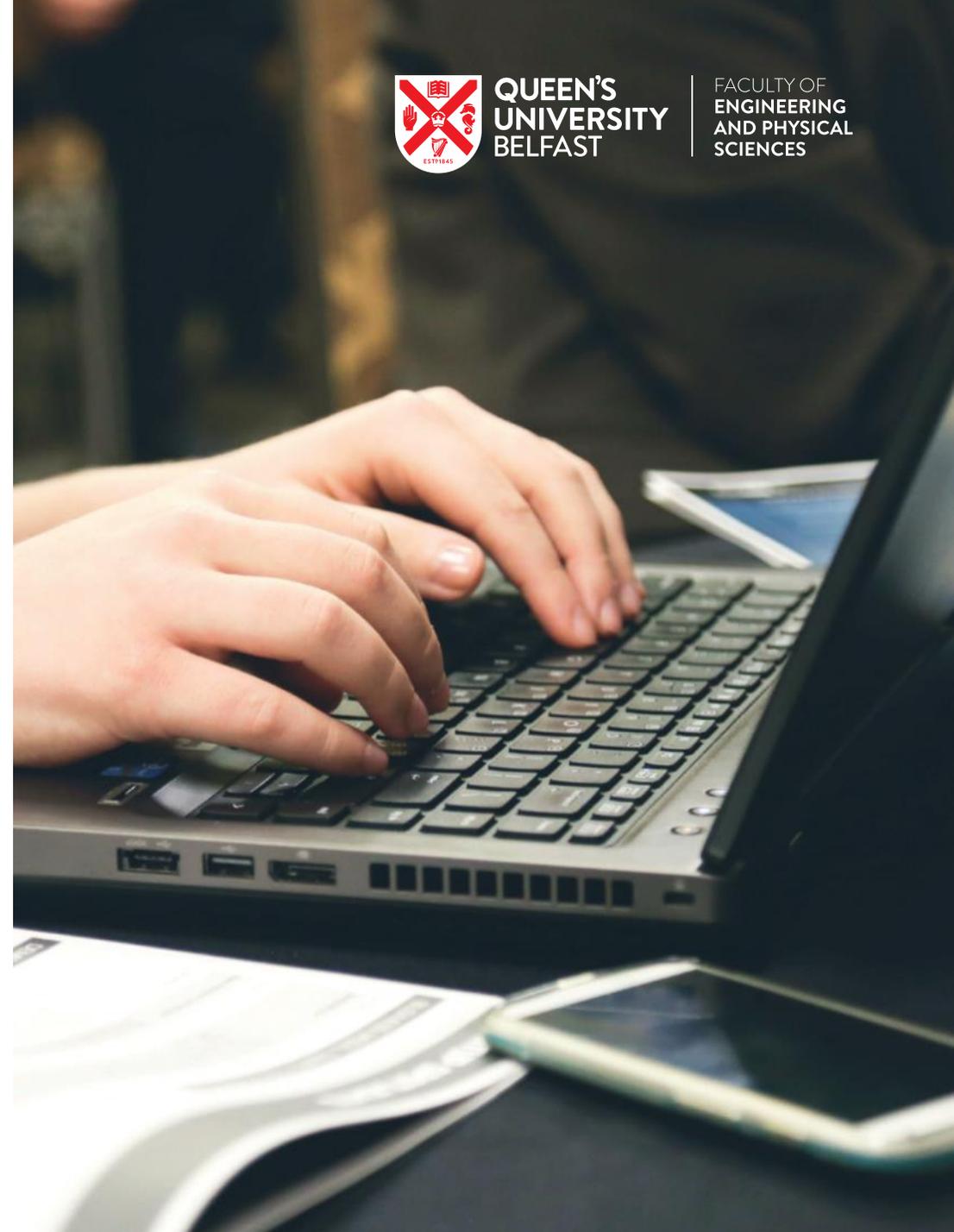
CAREERS DEVELOPMENT

Learn from our Carers team who provide advise on CVs and interviews to help you secure your dream job



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PROJECT BASED LEARNING

Team-based projects mimic the working environment of professional practice



PROJECT-BASED LEARNING



LINKS WITH INDUSTRY

Internship and graduate
employment

Advice on course content

Helping make real-world
impact



BOMBARDIER



ALLEN & OVERY



PETRONAS



CAPITA



CATERPILLAR



INVESTMENT IN FACILITIES

We are constantly investing in our facilities to ensure students can learn in the most up to date ways.

For example, we have recently invested £15 million in a new state of the art Computer Science building to reflect the importance of IT to the Northern Ireland economy.



QUEEN'S ACCOMMODATION ELMS BT2



QUEEN'S ACCOMMODATION ELMS BT2

New City Centre Accommodation Opened Autumn 2018

LOCATION

Located just 15 minutes from Queen's main campus (0.9mi), you'll be neighbours with the vibrant city-centre nightlife, popular restaurants and local supermarkets.

PREMIUM EN-SUITE ROOM

All students are allocated a premium single ensuite bedroom which includes a communal kitchen/living room. All rooms are spacious, have large single beds, lots of storage and modern shower rooms.

FACILITIES

Elms BT1 includes a student common lounge with games tables and a free of charge coffee bar. There is also a self-service laundry facility located within the accommodation. The reception is open 8.00am – 10.00pm 7 days a week should you require any assistance.



FEES

TUITION FEE

£1,400

- All tuition
- Course materials
- Field trips including transport
- Social activities
- Queen's Sport Off-Peak membership
- Certificate/transcript
- QUB Hoodie

ACCOMMODATION

£1,300 block booking

(Sunday 21 July to Saturday 17 August 2024 inclusive)

£45 per night for additional nights



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APPLICATION INFORMATION



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Entry Requirement

The summer school is designed for students currently studying an undergraduate degree at stage 1 or 2 in a subject area relevant to their selected programme

December 2023

ONLINE APPLICATION OPEN

FRIDAY 5 APRIL 2024

ONLINE APPLICATION CLOSE

FRIDAY 19 APRIL

PAYMENT DEADLINE

MAY 2024

VISA APPLICATION



LOYALTY SCHOLARSHIP AT QUEEN'S

Students who have attended the EPS Summer School who return to an **undergraduate** programme via one of our collaboration models or a **full-time postgraduate taught** programme, receive a 20% tuition fee reduction on first year of study

- Exclusions apply
- 20% tuition fee reduction on year 1
- Application necessary
- Queen's Loyalty Scholarship can only be used once and cannot be used in conjunction with other scholarships



HOW TO APPLY?

APPLICATION PORTAL: <http://go.qub.ac.uk/EPSSummerSchool>

- Click the 'APPLY NOW' link
- Fill in the Application Form
- Click "Submit Application"
- We will be in touch with further details of how to pay for your place on the programme



HAVE A QUESTION? GET IN TOUCH

Email: epssummerschool@qub.ac.uk

Website: <http://go.qub.ac.uk/EPSSummerSchool>



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