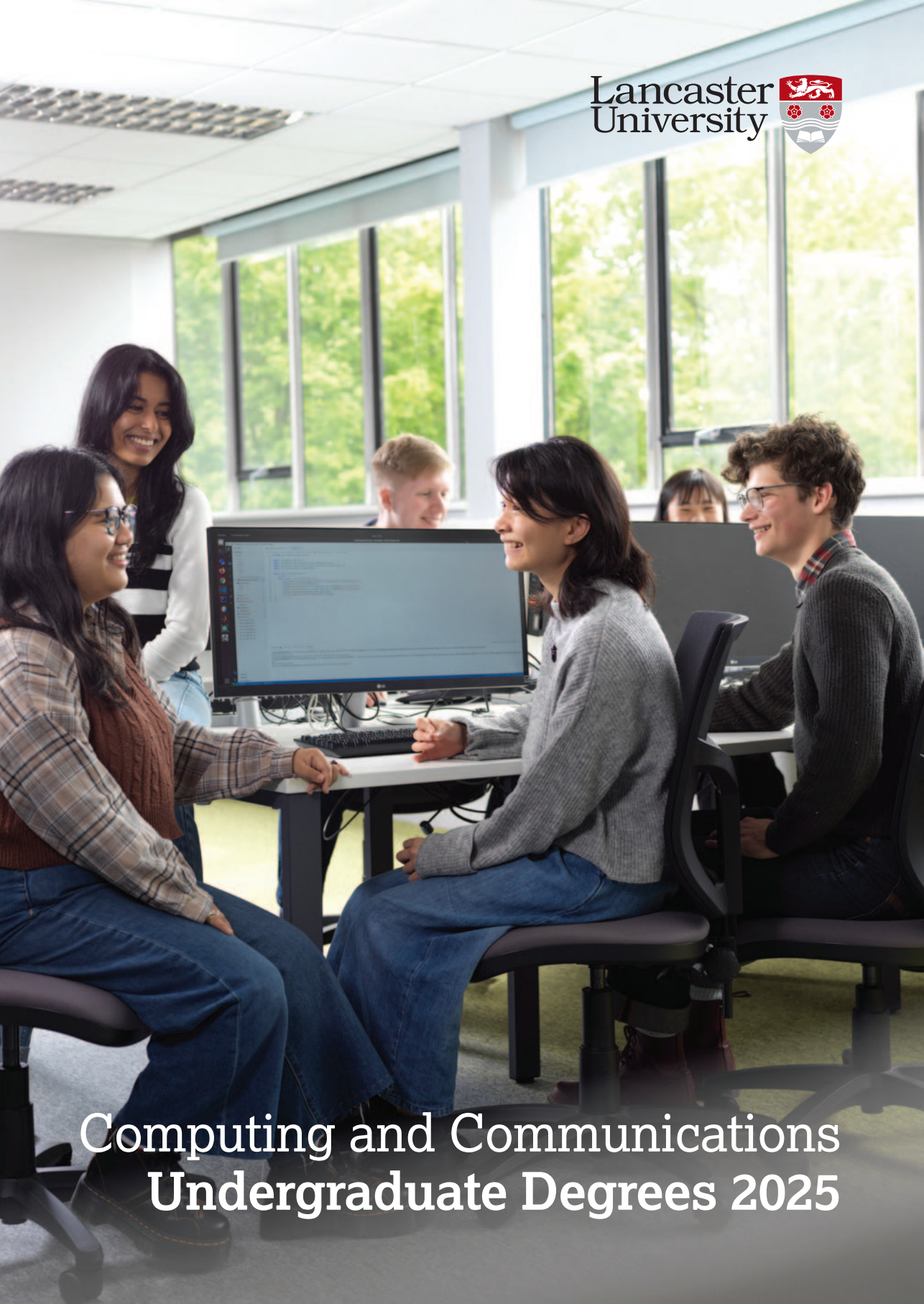


Computing and Communications
Undergraduate Degrees 2025

Welcome

Imagine possessing the computing skills to bring your creative ideas into a reality, and to literally have the power to transform other people's lives.

Computing and Communications is at the heart of a digital revolution that is touching all aspects of science, healthcare, business, entertainment and society, and Lancaster's set of computing programmes reflect that incredible breadth. Across this landscape our degree programmes cover areas of immense innovation and importance - Computer Science, Software Engineering, Cyber Security, and Data Science. Within these programmes you will see a carefully curated core set of skills across the first two years, alongside a rich pool of module choices in some of today's most exciting topics, from deep learning to computer vision and advanced cyber security.

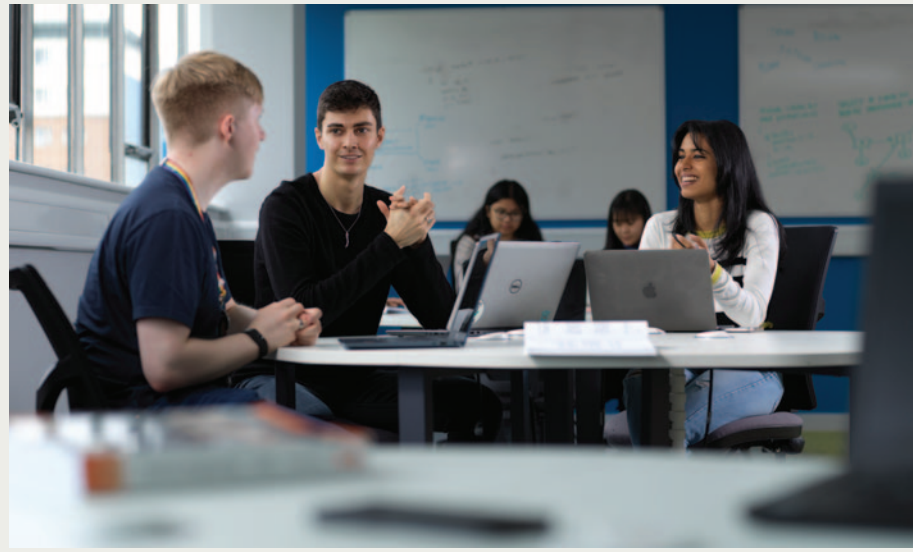
Our degree programmes will push your ability to solve complex problems, develop your data analysis skills and create safe, secure software and systems that provide new, genuinely valuable technologies to society. A computing degree is so much more than just computing as a technology, which is why we are passionate about helping you discover a fascinating and wide-ranging set of skills to unlock your potential.

Academic programmes are just one part of the university experience and we hope that you can visit us or join one of our digital events to find out why we believe Lancaster is a great place to study!

Professor Nigel Davies
Head of School

For more information please visit **lancaster.ac.uk/scc**

Contents



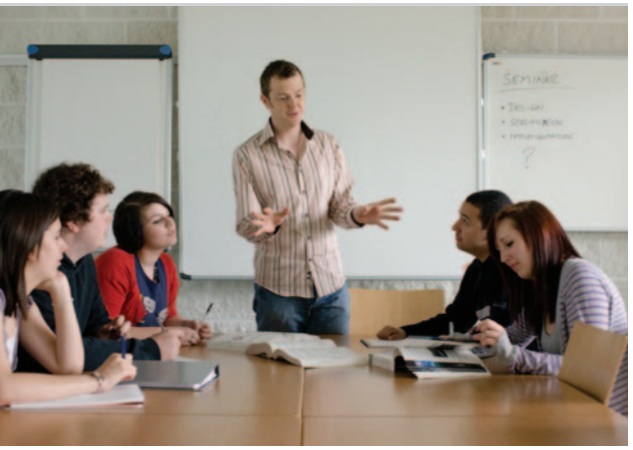
A place for the **innovator**

At no point in history has computing and communications been more central to innovation.

In 2020 the world suddenly changed, and with it, our reliance on computers increased exponentially. Software kept us connected at a time when we couldn't see friends or family. Data science kept us safe as the pandemic numbers grew and fell. Computer games kept us entertained when we couldn't go out. Cyber security experts worked to protect systems we depended on more and more. From our own planet, software landed a new Rover on Mars. It's safe to say the last few years would have been very different without the work of computer scientists.

As a computing graduate you'll be in high demand across a wide range of industries. Technology is constantly evolving and your degree will help to prepare you for future roles that don't even exist yet. It's a really exciting time to be a computer scientist!

Our building, InfoLab21, is home to the School of Computing and Communications, and is the region's leading centre for ICT research and commercial innovation, collaborating with companies such as BBC, Google, Microsoft and Samsung.



For more information please visit **lancaster.ac.uk/scc**

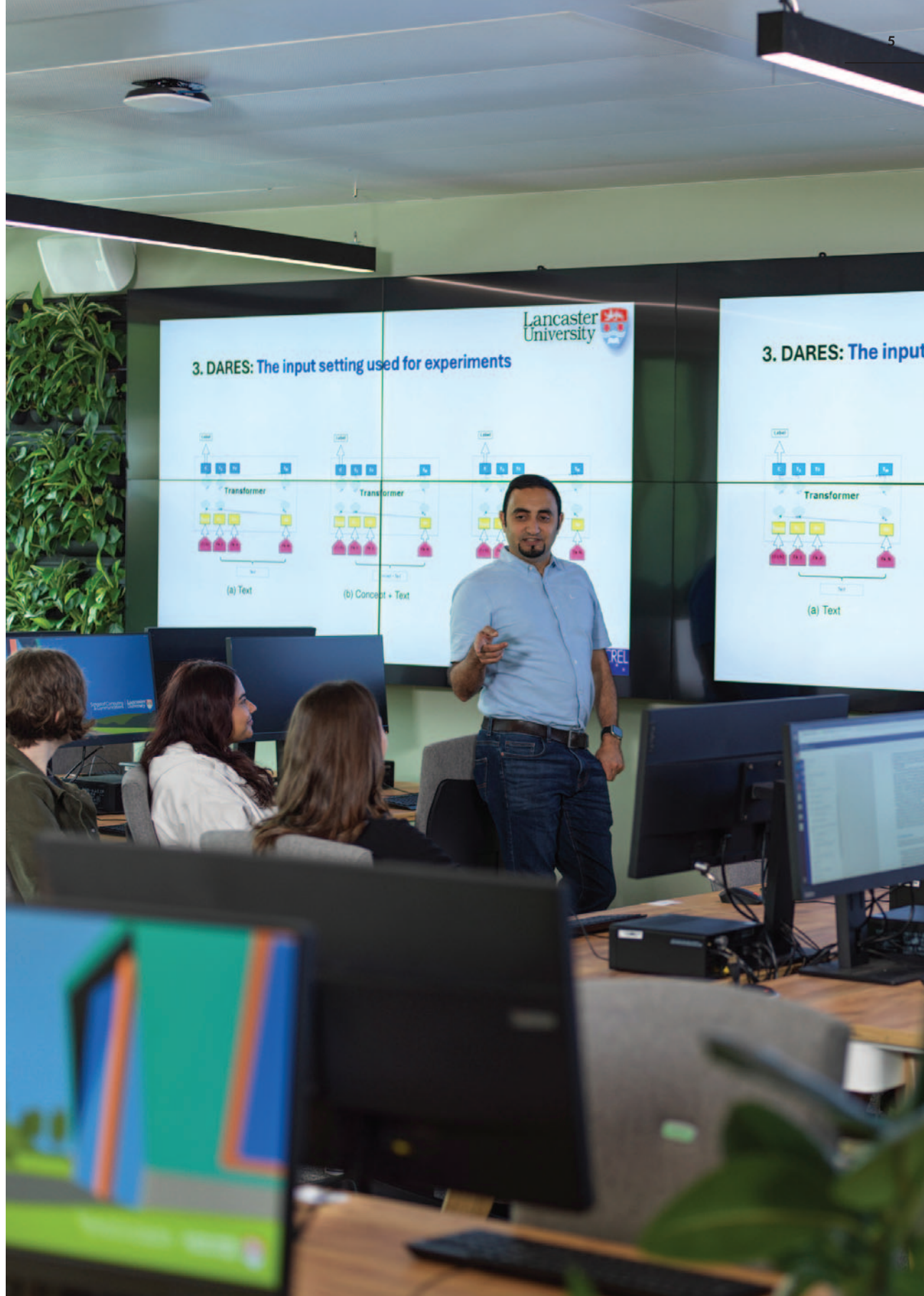
Your learning, your course

You'll be learning on a balanced programme which combines deeper theory with plenty of hands on experience. This blend equips you for a highly dynamic workplace and ensures immediate value to you and employers on graduation, as well as a lasting foundation for the future.

We want you to understand computing, from where it's been, to where it's going, why it matters and how it can help with all sorts of real-world problems. Our degrees take you from programming, analysis and computational thinking, through system architecture, networking, graphics, extended reality, human interface and interaction design, artificial intelligence and cyber-security, sustainable computing, and beyond, to creating robust, secure, useable software to meet real people's needs.

Joint 7th
for Computer Science and Information Systems
The Guardian League Tables 2024

Joint 14th
for Graduate Prospects
The Times and Sunday Times Good University Guide 2024



A future for **Maria**

I chose to study Software Engineering at Lancaster University because I was looking for a programme that focused on both the theoretical and practical elements of computing. When I was applying, I wasn't sure if I wanted to go into industry or stay in academia. Coming to Lancaster allowed me to explore both possibilities and make an informed decision. My favourite part of the course was definitely the three Software Design Studio Projects. These group projects allowed us to apply the knowledge we have learned so far, while also learning new techniques and working together as a team. I ended each project with knowledge of a new language or framework and a project to show for it. This helped me grow my portfolio and made applying for jobs much easier.

I decided to stay at Lancaster for an additional year to complete an integrated Master's. During this year, I've delved deeper into the art of becoming a good researcher. I particularly enjoyed one of the workshops, which focused on how to construct convincing arguments. It gave us small but effective tips that helped me ace my placement report and dissertation. Apart from that, I've also undertaken a three-month placement where I've had the opportunity to apply some of what I've learned over the past three years. The University takes care to find suitable companies for placements that align with each student's preferences and matches them based on shared interests.

Lancaster University has also allowed me to connect with people from all over the world. Over the course of my four years at Lancaster, I have made friends from Spain, Slovenia, Romania, and Malaysia! This was possible through the various societies, college events, and department workshops offered. Lancaster University has not only helped me find my professional path but also helped me gather a supportive circle of people who share my passion for programming.

For more information please visit **lancaster.ac.uk/scc**

Maria Hristova

4th year MSci Software Engineering

Somewhere to be **involved!**

Computer Science Society

We work closely with the School to provide exciting opportunities for you to engage with alongside your degree. We facilitate talks from industry, guest lectures, career development opportunities and more! Join us and get involved in a range of projects, from the small and simple to the long-term and ambitious. You can even get funding for your own idea if you have one! All students benefit from our peer-led support sessions for your academic studies, ranging from workshops to lectures.

Women++@InfoLab

Women++@InfoLab supports marginalised groups of staff and students within the School Of Computing and Communications. There are opportunities to meet up, as well as networking lunches, talks from industry representatives and academics, and workshops.
Two years ago we hosted the annual British Computing Society Lovelace Colloquium, and many of our undergraduates had the opportunity to present posters.

LUHack

Founded in 2014, the Lancaster University Ethical Hacking Group (LUHack) is a group of individuals who meet weekly to learn and practise ethical hacking in a safe (and legal!) environment. Anyone can learn the basics of hacking in the first semester before moving onto advanced topics and regularly attending conferences and competing in Capture the Flag competitions.

Femtech

Our free, student led society that aims to upskill minority groups of students in STEM subjects. Femtech aims to empower their members by providing career resources, workshops and courses (including a beginners Python course) in a nurturing and supportive environment, surrounded by likeminded individuals.

For more information please visit **lancaster.ac.uk/scc**

New experiences for **Luke**

I admit, I had never been to Lancaster before applying due to a very last-minute application, however to this day, I consider it one of the best decisions I was ever lucky enough to make. Lancaster has an incredible campus and atmosphere that genuinely makes it feel more like a community than a university, and it is one I felt welcomed into from my very first day.

The opportunities provided by different societies on campus alone makes it an incredible experience. While at Lancaster I have been able to do things like get involved with the LGBTQ+ community on campus (including getting to run the University's Instagram story at Pride last year) and also take up fencing, a sport that I have enjoyed throughout my time at Lancaster. The University has so many opportunities to not only develop your academic skills, such as the Computer Science Society or Ethical Hacking Society, but also the opportunities to develop other interests. Whether it is sports, activism or even baking, Lancaster has a group and a community just waiting to welcome you. And with such a great campus with plenty of facilities and open space, the opportunities are purely limited by if someone hasn't had the idea yet.

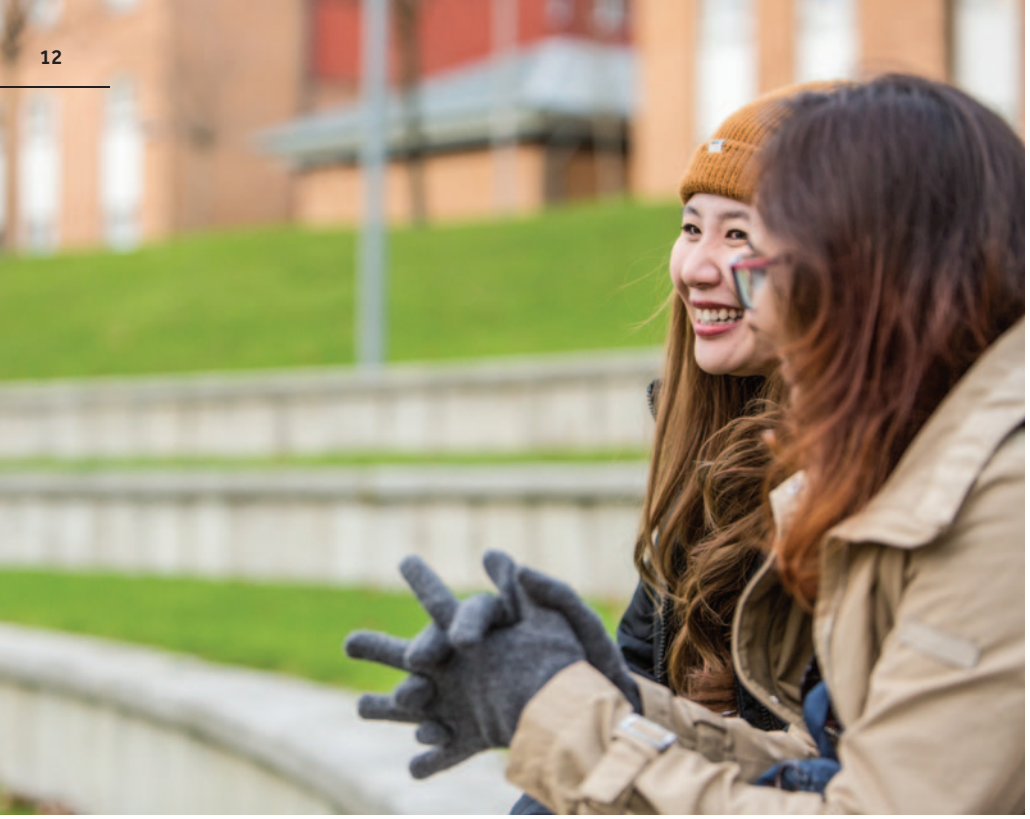
However, even with all these incredible opportunities, one of the most welcoming environments at Lancaster has undoubtedly been my department. As a student with ADHD and Autism, I have always felt supported by the department who do everything they can to help students with disabilities get the most out of their time at university and encouraging them to take part in extra opportunities. One of the ways they do this is by always looking for feedback on how to make things better by talking to students and involving them in the process to ensure everyone gets heard. Things like the academic rep scheme, or the department's Equality Diversity and Inclusivity committee are just some of the ways the staff work to ensure students are given opportunities to make their voices heard.

My course hasn't always been easy as I had not done computer science at college, but the academics who teach us soon changed that. The support they provide and enthusiasm they have for their subjects helped to provide insight and inspiration to help me now really love my subject. My department and the University have helped me grow in ways I never could have even imagined!

For more information please visit **lancaster.ac.uk/scc**

Luke Halpin

PhD student
BSc Software Engineering graduate



Lancaster Success **Programme**

The Lancaster Success Programme (LSP) is designed to support students from backgrounds that are traditionally underrepresented at university, who may not always be aware of the breadth of support and opportunities available to them.

Eligible applicants will be invited to join the scheme in the summer prior to starting university and are offered a programme of activities to enable them to thrive during their studies and successfully progress into graduate employment or postgraduate study. More information can be found at: **www.lancaster.ac.uk/student-success**

For more information please visit **lancaster.ac.uk/scc**

Support every step of the way

There's a whole host of different types of support available to you when you come to university, whether it's helping you settle into to your new accommodation by talking to your College Advisory Team, or getting some help with your course by dropping into daily support sessions in our FAST Hub run by our Senior Teaching Associates.

You'll meet your Academic Advisor in your first week of university, and they will be here to help you with any course issues or queries you may have.

Our Computer Science Society also provides peer-led support sessions and weekly internet cafes.

A home away from home for **Vyomika**

My journey at Lancaster started as an international student who moved 7000 miles away from family, to a place I had never seen before. Unfortunately, I had no prior coding experience and had only done a couple of summer courses online in C and Java before starting my major at Lancaster. Luckily, the course was designed to accommodate both advanced students with "hacker edition" tasks and also beginners like myself.

Throughout my degree there were a range of different modules that helped strengthen my knowledge in many important fields like networking, operating systems, databases, and AI, as well as programming-intensive technical modules and knowledge-based topics like ethics and HCI. Some of these modules were quite challenging, and I needed to get help outside of normal contact hours from the lecturers. Fortunately, all of them have been so kind and are always happy to reply to my emails and provide help when needed. It is from this variety of fields that I have been able to establish the area that I am particularly passionate about and that I'd like to specialise in for my Master's degree.

Nevertheless, some of the most valuable skills were actually learned by doing the year-long group project. Collaborating with other coders, time management, communication, and team development in version control are some of the skills that are most highly preferred by employers, and exactly what was taught through the group project.

Students at Lancaster can also find a variety of part-time work for added income or opportunities to gain more experience. Many of my friends worked part-time in the restaurants and cafes on campus while I worked as a Student Ambassador for the University and for the School of Computing and Communications. The Information Support Systems team at the University also employs suitable computing students for working in the Lancaster Portal, both front end and back end, and this provides great experience for students that can be tailored to your preferred hours.

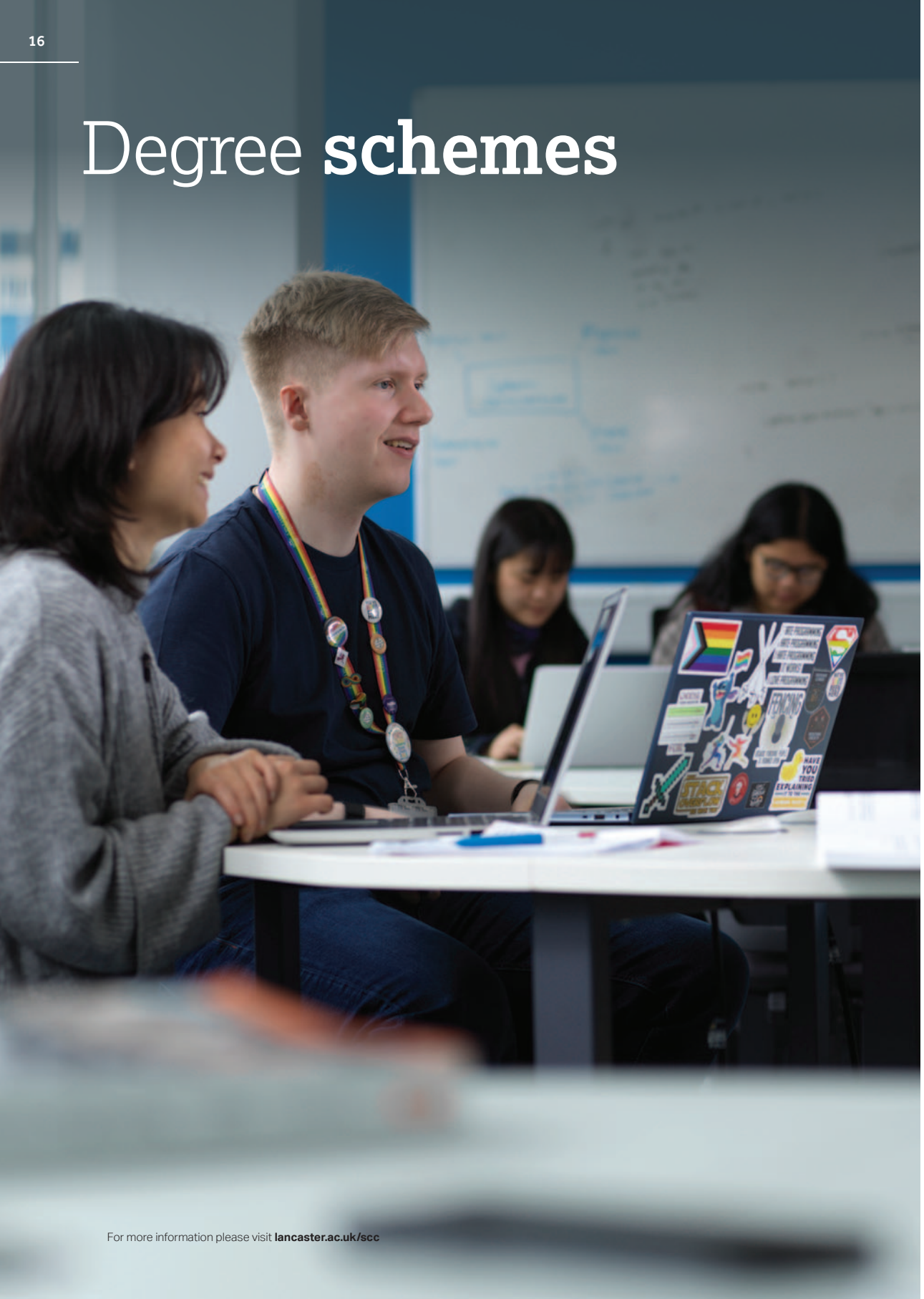
My experience at Lancaster will be a memory that I will cherish forever.

For more information please visit **lancaster.ac.uk/scc**

Vyomika Agarwal

3rd year BSc Computer Science

Degree **schemes**



For more information please visit **lancaster.ac.uk/scc**

BSc Hons Computer Science G400

You will obtain a broad yet rigorous grounding in this innovative discipline, with a strong emphasis on experimental computer science.

In the first year, you will receive a comprehensive understanding of the fundamental principles of the discipline, combined with their modern day application.

Throughout your study, you will gain skills and experience from a range of modules, and you'll be taught from all five main themes of computer science, studying topics such as software development, data engineering, secure cyber systems, and professionalism in practice. Taking a practical approach to learning, you are encouraged to build and analyse systems and software, as well as work with end user feedback to refine and adapt solutions.

After gaining an overview of the subject in the first year, you will be motivated by topics that become progressively deeper and more specialised as your skills develop throughout second and third year. From Year 2, more optional modules become available, allowing you to tailor you studies to your own interests and future career aims. These include topics such as concurrent and parallel systems, sustainable computing, deep learning, embedded systems, and secure artificial intelligence.

Your final year gives you the opportunity to explore a range of enriching topics, as well as undertaking an individual project with one of our academics, allowing you to use and further develop the skills acquired throughout your degree.

As well as these options, you will undertake a dedicated group project in second year and an individual project with one of our academics in your final year. These allow you to use and further develop the skills acquired throughout your degree and demonstrate your ability to work on real-world tasks for post-graduation employment.

MSci Computer Science G404

Your first three years will be spent alongside your companions on the BSc, but as they graduate, you'll be preparing for your fourth year, where you'll be studying Master's-level modules, and undertaking an industry placement, giving you an advantage in the global job market.

Topics covered will include research methods and innovation, to teach the more advanced skills expected of Master's students in your future research or industry destinations, and for your placement we will set you up with a partner organisation or research group, which fits your skill set and builds on your existing knowledge.

Watch our Computer Science degree video

Our degrees are built from a range of modules encompassing five main themes of computer science

Software covering programming languages and how to make software

Data and Algorithms covering the theoretical foundations of computer science, data engineering, and different types of artificial intelligence

Systems covering how software and hardware interact within computers and across networks

Interactions and Implications covering professionalism, ethics, computing's impact on the world, and how people interact with computer systems

Cyber Security covering the theory and techniques to identify and protect physical, software, and AI systems

Can't decide whether to apply for the BSc or MSci?

That's fine! You can use just one of your UCAS choices - those students who do not achieve their conditional offer for the MSci will automatically be offered a place on the BSc, providing the entry criteria have been met (see page 24). You can also change when you get here, from one to the other, anytime through to Easter of your 3rd year, providing you are achieving the minimum required grades as you go along.

Can't decide which degree scheme to apply for?

No problem! Our Computer Science, Software Engineering, Cyber Security, and Data Science* degree schemes all have a common first year to provide the broad foundation that any computing professional should know. This means you can switch to a different scheme during first year!

**Switching to Data Science requires having taken a Mathematics & Statistics minor option during first year.*

BSc Hons Software Engineering G602

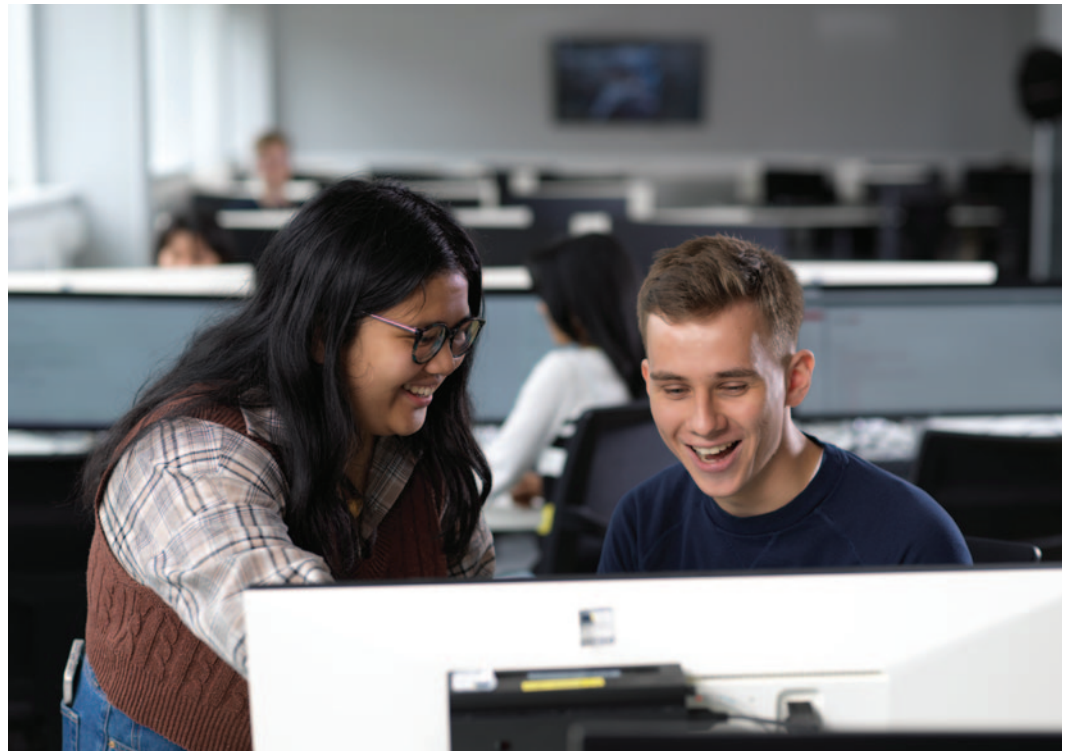
Your first year will provide you with the fundamentals of computer science, software development, professionalism, and digital systems, allowing you to gain the essential knowledge needed for analysis and design. In addition to developing your foundational understanding, programming, and software design skills, you will explore social, ethical and professional issues related to the discipline, which will allow you to develop the working knowledge and skills to overcome the challenges of designing, developing and evaluating real-world software systems.

Your second and third years offer advanced topics including algorithm, operating systems, computer graphics, deep learning, and advanced networking. You will also undertake a variety of software engineering specific design studio modules, ensuring you gain a broad and robust level of skills and experience in team-based software development. These projects will also develop your data analysis, graphical, report writing and presentation skills.

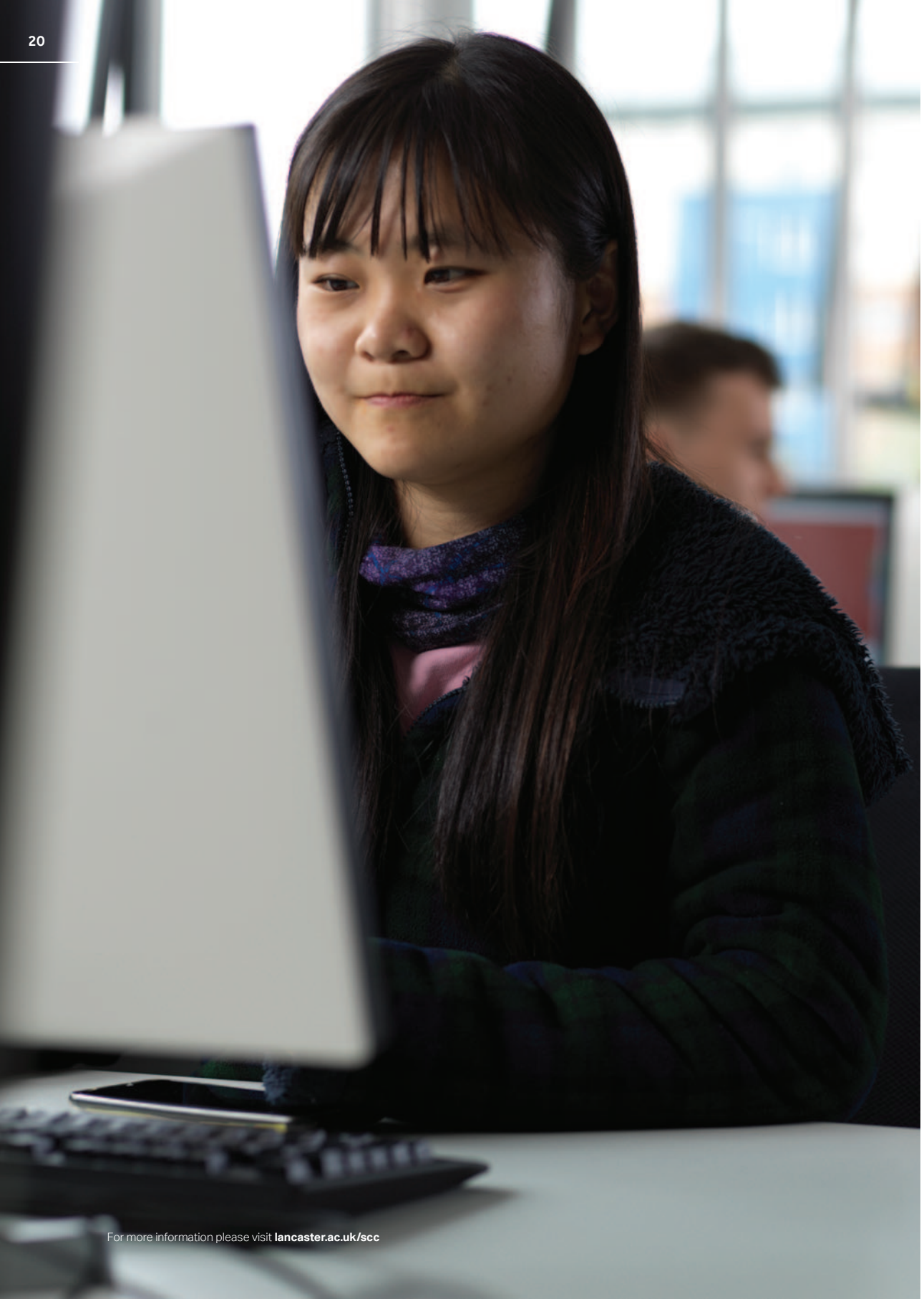
MSci Hons Software Engineering (with Industrial Experience) G601

Your first three years will be spent alongside your companions on the BSc, but as they graduate, you'll be preparing for your fourth year, where you'll be studying Master's-level modules, and undertaking an industry placement, giving you an advantage in the global job market. For your placement we will set you up with a partner organisation or research group, which fits your skill set and builds on your existing knowledge.

Watch our Software Engineering degree video



For more information please visit **lancaster.ac.uk/scc**



For more information please visit **lancaster.ac.uk/scc**

BSc Hons Cyber Security I900

The importance of Cyber Security is widely recognised in modern society. Skilled experts are in high demand, and as a NCSC recognised Academic Centre of Excellence in Cyber Security Research and in Cyber Security Education, we have extensive expertise in the field.

If you're an aspiring cyber security systems engineer or architect looking to exploit the latest cutting-edge cyber security research to build modern, resilient and secure computing platforms then this is the degree designed for you.

As with our other degrees, in your first year you will receive a comprehensive grounding in computer science and cyber security fundamentals covering both theory and practice.

In your second and third years you will begin to specialise in areas that inspire you. You will choose to study cyber security topics that include security and penetration testing, digital forensics, cryptography, network security and resilient distributed systems. You will begin to design software and systems solutions to specific problems using appropriate methodologies and tools, and demonstrate, analyse and design different approaches to undermine security and recover from security failures in modern systems based on an understanding of attackers.

This programme also includes advanced and emergent cyber security fields that draw on the expertise of our world-class research academics such as security of autonomous systems, secure AI, secure cyber physical systems and security metrics.

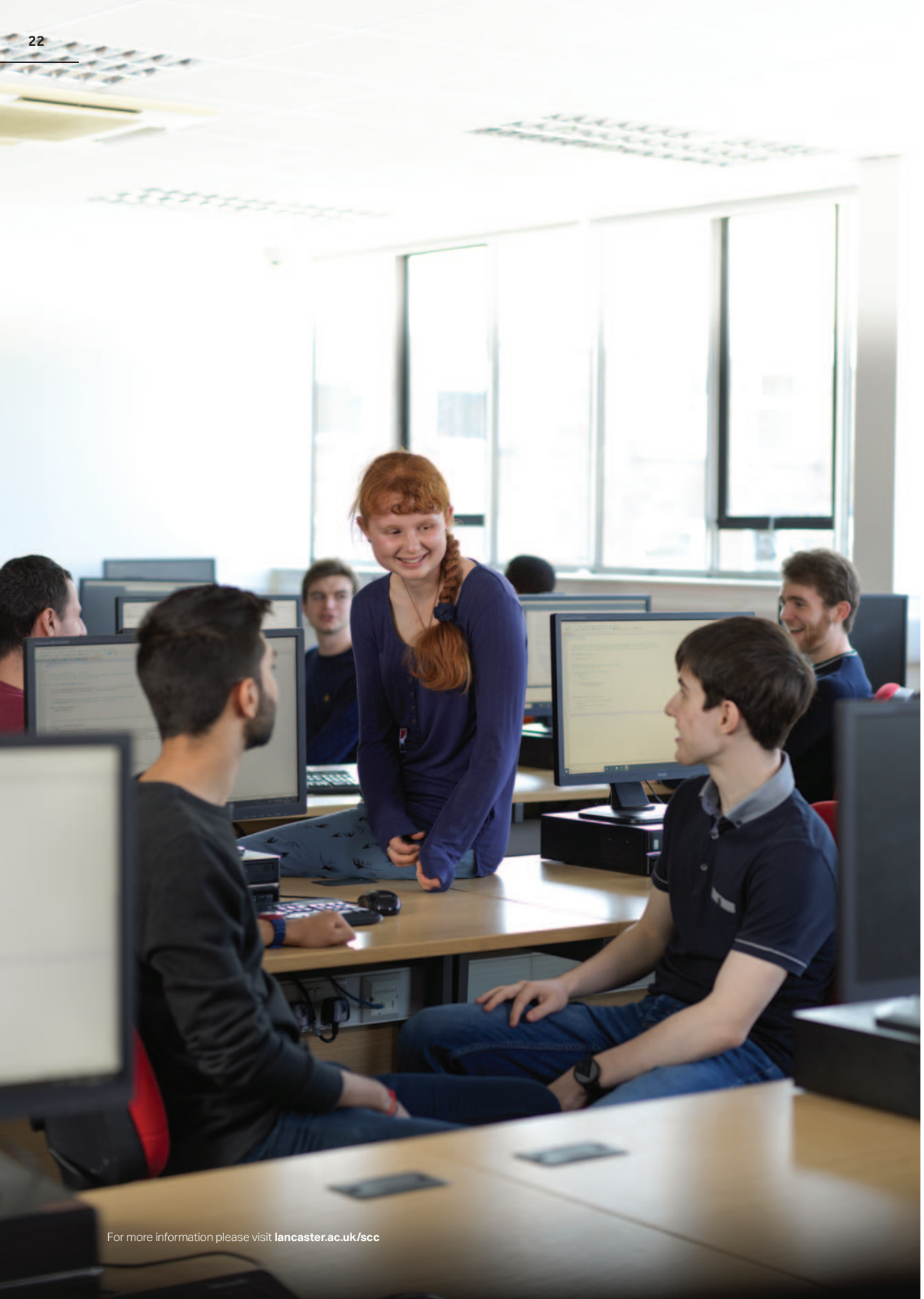
Practical sessions are supported by a 'dynamic lab' where members of staff and teaching assistants are available in-lab during the majority of the week to provide assistance with module content as required. This will support you in addressing small problems quickly and help your understanding.

Excitingly, the North West is receiving extensive, large scale national cyber security investment that will create significant new job opportunities. The University is building effective partnerships with these organisations who will inform this programme.

MSci Hons Cyber Security (with Industrial Experience) I902

Your first three years will be spent alongside your companions on the BSc, but as they graduate, you'll be preparing for your fourth year, where you'll be studying Master's-level modules, and undertaking an industry placement, giving you an advantage in the global job market. For your placement we will set you up with a partner organisation or research group, which fits your skill set and builds on your existing knowledge.

Watch our Cyber Security degree video



For more information please visit **lancaster.ac.uk/scc**

BSc Hons Data Science G900

Data science plays a vital role in all aspects of the modern world. Our BSc programme will ensure you have a strong foundation in this rapidly expanding, highly in-demand field. You will gain cutting-edge knowledge and skills through state-of-the-art equipment and excellent teaching offered by both the School of Computing and Communications and the School of Mathematical Sciences, delivered by academics who are leaders in their field.

In your first year, you will receive a comprehensive grounding in the theory and practical skills of computer science and gain an understanding of mathematical methods and concepts. You will also enhance your data analysis, problem-solving and quantitative reasoning skills.

In the second and third year, our academic experts will teach the significant contemporary developments in research, practice, and technology. This means you will further deepen your knowledge in linear algebra, probability and statistics, as well as computer science topics in our *Software* and *Data and Algorithm* themes. You will also take part in interesting group and individual projects designed for data scientists.

Your final year will also give you the opportunity to specialise in a range of enriching research-informed optional modules, as well as undertaking a substantial data science individual project. This will be great experience for you to draw upon in an interview and in your career.

Importantly, you will learn to recognise and apply the legal, social, ethical, and professional codes of conduct relevant to a practicing computing professional, including equality, diversity, inclusion, and sustainability principles.

Watch our Data Science degree video

MSci Hons Data Science (with Industrial Experience) G903

Your first three years will be spent alongside your companions on the BSc, but as they graduate, you'll be preparing for your fourth year, where you'll be studying Master's-level modules, and undertaking an industry placement, giving you an advantage in the global job market. For your placement we will set you up with a partner organisation or research group, which fits your skill set and builds on your existing knowledge.

Entry **requirements**

All our courses require GCSE Grade B/6 in Mathematics and GCSE Grade C/4 in English

Students applying with an A level in Computing or Mathematics will be considered to receive a lower offer.

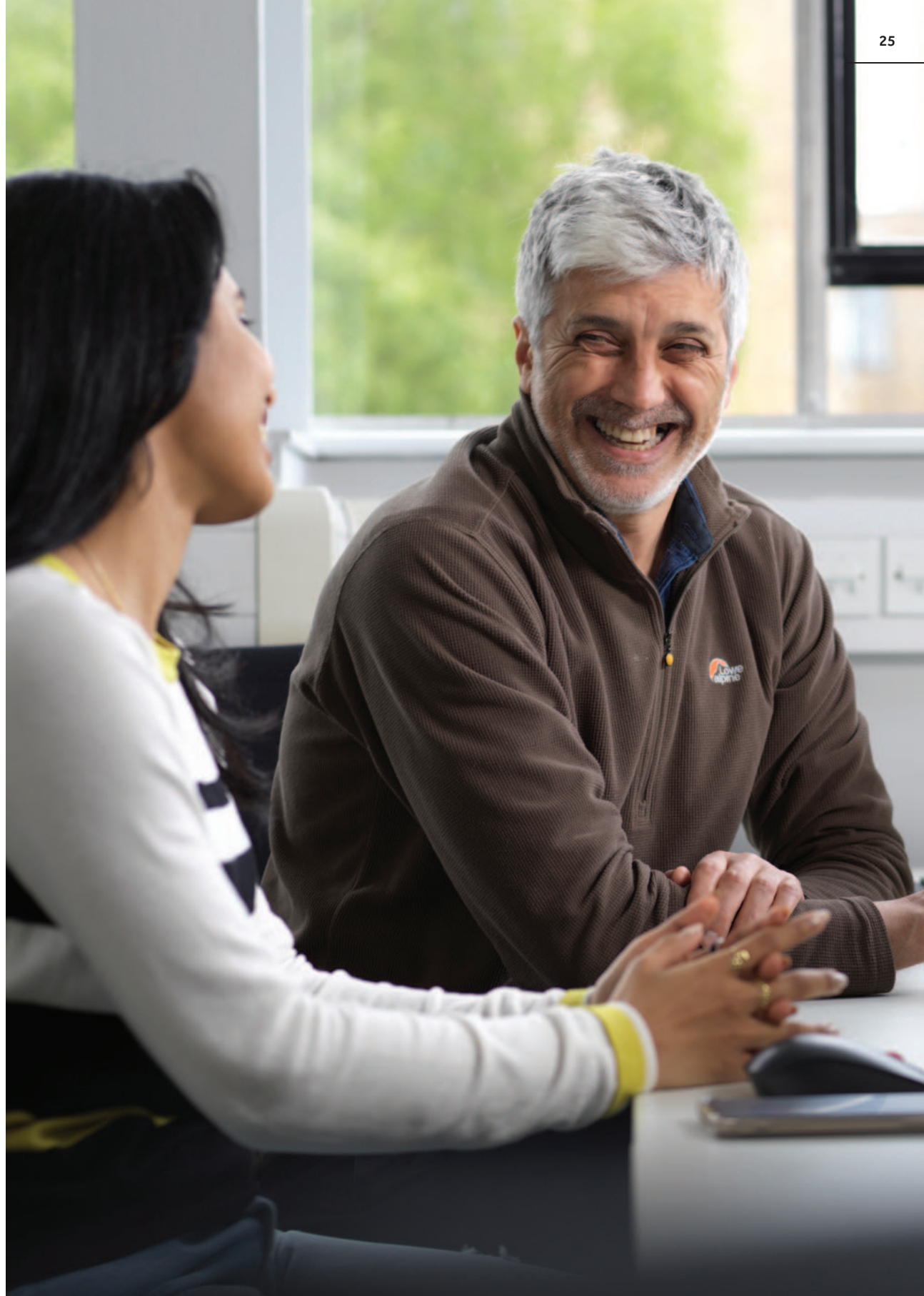
	A levels	International Baccalaureate	BTEC	Combined BTEC and A levels **
BSc Hons Computer Science G400	AAB	35 points, with 16 from best three HL courses	DDD	DDB/DAB
MSci Hons Computer Science (with Industrial Experience) G404	AAA	36 points, with 16 from best three HL courses	DDD	DDA/DAA
BSc Hons Computer Science (Study Abroad)* G403	AAA	36 points, with 16 from best three HL courses	DDD	DDA/DAA
BSc Hons Cyber Security I900	AAB	35 points, with 16 from best three HL courses	DDD	DDB/DAB
MSci Hons Cyber Security (with Industrial Experience) I902	AAA	36 points, with 16 from best three HL courses	DDD	DDA/DAA
BSc Hons Cyber Security (Study Abroad)* I901	AAA	36 points, with 16 from best three HL courses	DDD	DDA/DAA
BSc Hons Data Science G900	AAB †	35 points, with 16 from best three HL courses	Considered alongside A level Mathematics	DDA/DAB †
MSci Hons Data Science (with Industrial Experience) G903	AAA †	36 points, with 16 from best three HL courses	Considered alongside A level Mathematics	DDA/DAA †
BSc Hons Data Science (Study Abroad)* G902	AAA †	36 points, with 16 from best three HL courses	Considered alongside A level Mathematics	DDA/DAA †
BSc Hons Data Science (Placement Year) G901	AAA †	36 points, with 16 from best three HL courses	Considered alongside A level Mathematics	DDA/DAA †
BSc Hons Software Engineering G602	AAB	35 points, with 16 from best three HL courses	DDD	DDB/DAB
MSci Hons Software Engineering (with Industrial Experience) G601	AAA	35 points, with 16 from best three HL courses	DDD	DDA/DAB
BSc Hons Software Engineering (Study Abroad)* G603	AAA	36 points, with 16 from best three HL courses	DDD	DDA/DAA

*Our Study Abroad courses require an A level in either Computing or Mathematics (or Grade 6 HL in either subject for IB)

**Combination should be either a BTEC Diploma with 1 A level, or a BTEC Subsidiary Diploma/ Extended Certificate with 2 A levels

†Including Mathematics or Further Mathematics grade A

For more information please visit **lancaster.ac.uk/scc**



For those with **multiple passions**

Our combined honours degrees are ideal for those of you who like to have a few varied projects on the go at once. You can study modules from two different departments, allowing you to study where your interests lie.

BSc/MSci Hons Computer Science and Mathematics

AAA

Studying in both the School of Computing and Communications and the School of Mathematical Sciences, you will learn from two of the country's leading research and teaching specialists in these fields. Learn about computing fundamentals like languages, logic and software engineering whilst building your pure mathematics knowledge with algebra and analysis.

MSci students will write an additional dissertation in fourth year, under the supervision of an academic from one of the two Schools. You'll be proficient to Master's-level in mathematics, computing, research methods and professional skills.

There is also a BSc Placement Year version available.

BSc Hons French/German/Spanish Studies and Computing

AAB

You'll be studying between the Department of European Languages and Culture, and the School of Computing and Communications.

Your third year will be spent living in the country whose language you've been studying, either working in a placement, or studying at a partner institution, immersing yourself in their culture, and progressing your language skills.

BSc Hons Management and Information Technology

AAB

Lancaster's Management and Information Technology (MIT) degree has been created in partnership with business professionals to give you the ability to apply IT to business situations, evaluate technical knowledge and confidently take on project and team management in IT-related business scenarios.

You will gain a sound academic basis in management, with an understanding of the concepts, debates and issues in the areas of:

+ Change Management
+ Project Management
+ Information Technology Management
+ Information Systems Development

Accredited as a Tech Industry Gold Degree, this course helps you to stand out in the job market and opens up careers with any of our sponsor organisations.

There is also a BSc Hons Industry version available.

For more information please visit **lancaster.ac.uk/scc**

School of Computing & Communications | Lancaster University

Computing and Communications

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