Computing and Communications

Undergraduate Degrees 2022
Imagine being able to possess 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.

A computing degree will push your ability to solve complex problems, and develop your understanding of how to create software that provides new, genuinely valuable technologies to society. A computer science degree is so much more than just computing as a technology, which is why we are passionate about helping you discover the fascinating and wide-ranging skills to unlock your potential.

All of you will have had your education impacted by Covid-19 in some way, and, for some of you, you will be coming in as an undergraduate with less confidence and less experience than in previous years. We therefore want to reassure you, that we will be putting support mechanisms in place, particularly throughout your first year to ensure that you have all the skills that you need to progress through your degree.

Our admissions process will also reflect these changes - you will not be disadvantaged if you are unable to include extracurricular experiences in your personal statement and due to the exam disruptions, we will be as flexible as possible with A level grades.

University is so much more than just the academic programme, so we strongly recommend that you visit us or join one of our digital events to find out why we believe Lancaster is a great place to study!
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. Even off our own planet, software landed a new Rover on Mars. It’s safe to say the last year 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!

Alongside your academic studies at Lancaster you will have the opportunity to enhance your CV through internships and placements throughout your degree. Dedicated staff match you with businesses for placements and internships, or even help you start your own business!

InfoLab21 houses our School of Computing and Communications, and is the region’s leading centre for ICT research and commercial innovation, collaborating with companies such as Google, BBC, Samsung and Microsoft.

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 courses take you from programming, analysis and computational thinking, through system architecture, networking, graphics, human interface and interaction design, artificial intelligence and cyber-security, and beyond, to creating robust, secure, useable software to meet real people’s needs.
It sounds like something so fleeting to base your choice of university on, but just the feeling you get on campus, where it feels very safe, very secure, very modern. At the same time you look out in any direction and it’s countryside as far as you can see, so you get the best of both worlds in a sense. I come from London as well, so I’m used to it being a bit more busy, so it was such a nice refreshing environment to come to, and it suited me great!

Making friends was a bit of trial and error – I’d meet people through living with them, through trying out societies, through just introducing myself to people on the first few days of the course. At Lancaster, the societies are such a great opportunity, they make it so easy to pick up a new skill. Swing dancing specifically caught my eye, and I joined the society for that which started when I was in my third year. What was really nice about the society was that it allowed me to start learning in a very safe space. Then once I become more comfortable, and as my fondness for swing dance grew, I was later introduced to the wider swing dance community in Lancaster city centre.

My favourite thing about the course is that computing is so fundamental in the world today. There’s crossover with basically any other subject – any sort of interactive system work has heavy crossover with sociology and psychology, because you’re thinking about both sides of the equation, both the human and the computer. That’s always been one of my main interests within the course, coming from studying social sciences at A level. I developed games that use eye tracking, as a form of therapy for children with ADHD and autism. It’s easy to see how a lot of psychological considerations would come into play with that project.

What I really love about the course here at Lancaster is the lecturers and how they teach the course from the ground up. That’s not to say it’s like a baby version of the course compared with other universities, just that the lectures take that bit of extra time at the start to make sure everyone is up to speed before diving deep into the complex and interesting parts, which I think is a great way to do things.

Edward Thompson  
MSci Computer Science
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.

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.

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. This year we hosted the annual British Computing Society Lovelace Colloquium, and many of our Undergraduates had the opportunity to present posters.
Megan Borland
BSc Computer Science

I came on an Open Day and just wanted to get a general feel of the place, and go to the department talks, and I really liked the fact that it was more in the countryside, very green, very open. Then I came back on the Applicant Visit Day, and I had a proper tour of the campus, I had a proper look around the accommodation, and I decided that this was the place for me. It was more open, it was more in the countryside, and that’s what sort of background I come from. So it was definitely the place for me.

I’d only started studying computer science at A level, so I still didn’t know what exactly I’d like about it. Having the variety of modules really meant that I could still get a wider understanding of the subject and figure out which bits I actually liked, and which bits I wasn’t so keen on. This then helped me to make decisions when it came to my final year about which modules I wanted to take.

I remember in first year there was a module that I really, really loved that everyone else hated because it was really mathsy, and that’s one of my strengths. They always take first year as the opportunity to take everybody up to the same level and the teaching staff are so supporting, the lecturers will come to the labs to help you out, and there are extra teaching assistants in the labs to help you if you need them.

My favourite module from this year would be Human-Computer Interaction. I find it really interesting coming into the situation and you have to investigate what needs improving and why it needs to be improved, how they want it to be improved, and coming up with these prototypes and designing them and evaluating that. I find it quite interesting because what you expect they would come back and say and what they actually say are completely different – things like ‘oh I’d never actually thought about that’, I just found that really interesting.

The course has definitely given me an idea of what I prefer to do. At the moment I’m thinking more towards Human-Computer Interaction, but I’m still not 100% certain. But I know I get to pick modules next year and for my final year, and so hopefully that will really help me to decide as well.

A place for
Megan
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 your new accommodation by talking to your College Advisory Team, or getting some help with your course by coming to one of the School’s weekly drop in sessions 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.

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/widening-participation/lancaster-success-programme/
Fraser Benjamin
BSc Computer Science

My favourite bit of the course is definitely the programming side – the weekly labs are always really good, and the teaching assistants always help you out if you get stuck! There’s loads of support available if you have any questions and things - everyone seems happy even in labs and things to help each other out when you get stuck.

In our first year we’ve started off by using the C programming language, which was new to me. Then we’ve just started doing Java now which is really interesting, we’ve done a little game arena where we’ve got balls bouncing around the screen and a little game we’ve been building. That’s the programming side. Then we’re doing more of the theory, different data structures and that kind of stuff. Then we’ve also looked at doing MIPS which is like an assembly language for writing low level machine code for computers.

I didn’t realise how strongly the college atmosphere played at Lancaster. You hear bits about it at the Open Day, but the colleges are really great – there’s a bit of a rivalry going on, and lots of activities and stuff to join in with.

There’s so much going on in that first two-three weeks that you just forget about being away from home and just get stuck in. There were loads of activities and clubs and societies, so just by throwing myself into that you kinda almost forget about it. I help with the cinema on campus, I normally try and do Taekwondo as well, which was fun to start when I got here. All sorts of other stuff crops up like the college events and stuff, I help out with those too.

Everybody in my flat is really friendly, we’re actually sort of friends within the block, we’ve got a games night on there tonight in the flat across the way. We often head out for nights out with other people in the flat so it’s really nice and friendly. The accommodation is really good as well, really high quality, the cleaners come round regularly which is always nice.

A home away from home
for Fraser
**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 four areas of Computer Science - Fundamentals, Software, Systems, and Society, studying topics such as Theory of Computing, Programming, Embedded Systems and Technology and Society. 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. In addition to progressing your foundational understanding, programming, and software design skills, you will explore social, ethical and professional issues, giving you experience of computing in the real world.

Your final year gives you the opportunity to explore a range of well-constructed and enriching modules, 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.

**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 Masters-level modules, and undertaking two industry placements, giving you an advantage in the global job market.

Your modules may include Data Mining, and Elements of Distributed Systems, and your placement will set you up with a partner organisation, which fits your skill set and builds on your existing knowledge.

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

That’s fine! You can just use one of your UCAS choices - Those students who do not achieve their conditional offer for the MSci will automatically be offered a place on our BSc Computer Science, providing these entry criteria have been met (see page 20). 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 grades as you go along.
Based around our dedicated Software Engineering Design Studio, your first year will provide you with the fundamentals of computer science, software development, and digital and information systems, allowing you to gain the essential knowledge needed for analysis and design. You will also begin to develop complex computer programming skills, learning to write, analyse, debug, test, and document computer programmes.

Your second and third years offer advanced modules, including Distributed Systems, Human-Computer Interaction, and Languages and Compilation. 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.

You will also undertake a variety of software design-based modules, ensuring you gain a broad and robust level of skills and experience. These projects will develop your data analysis, graphical, report writing and presentation skills.

Your final year will also give you the opportunity to undertake an individual project. In this project you will work closely with one of our academics, allowing you to use and further develop the skills acquired throughout your degree.

**BSc Hons Software Engineering G602**

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 Masters-level modules, and undertaking two industry placements, giving you an advantage in the global job market. Your placement will set you up with a partner organisation, which fits your skill set and builds on your existing knowledge.

**MSci Hons Software Engineering G601**

Can’t decide whether to apply for the BSc or MSci? That’s fine! You can just use one of your UCAS choices - Those students who do not achieve their conditional offer for the MSci will automatically be offered a place on our BSc Software Engineering scheme (G602), providing these entry criteria have been met (see page 20). 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 grades as you go along.
## Entry requirements

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<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>A levels</th>
<th>International Baccalaureate</th>
<th>BTEC</th>
<th>Combined BTEC and A levels **</th>
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<tbody>
<tr>
<td>G400</td>
<td>BSc Hons Computer Science</td>
<td>AAB</td>
<td>35 points, with 16 from best three HL courses</td>
<td>DDD</td>
<td>DDB / DAB</td>
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<tr>
<td>G404</td>
<td>MSci Hons Computer Science (With Industrial Experience)</td>
<td>AAA</td>
<td>36 points, with 16 from best three HL courses</td>
<td>DDD</td>
<td>DDA / DAA</td>
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<tr>
<td>G402</td>
<td>BSc Hons Computer Science (Study Abroad) *</td>
<td>AAA</td>
<td>36 points, with 16 from best three HL courses</td>
<td>DDD</td>
<td>DDA / DAA</td>
</tr>
<tr>
<td>G602</td>
<td>BSc Hons Software Engineering</td>
<td>AAB</td>
<td>35 points, with 16 from best three HL courses</td>
<td>DDD</td>
<td>DDB / DAB</td>
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<tr>
<td>G601</td>
<td>MSci Hons Software Engineering (With Industrial Experience)</td>
<td>AAA</td>
<td>35 points, with 16 from best three HL courses</td>
<td>DDD</td>
<td>DDA / DAA</td>
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*G402 (Study Abroad) requires 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

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.

We understand that the pandemic has changed everyone’s life. You therefore won’t be disadvantaged if you cannot include extracurricular activities in your personal statement.
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

You’ll be studying modules from two of the country’s leading research and teaching specialists in Computer Science and Mathematics – learning about computing fundamentals like languages, logic, and software engineering; while building your pure mathematics knowledge with algebra and analysis.

MSci students will additionally get to write a dissertation in fourth year, under the supervision of an academic from one of the two departments. You’ll be proficient to Masters level in mathematics, computing, research methods and professional 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 graduates to stand out in the job market and opens up careers with any of our sponsor organisations.

**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.

If you don’t want to go the whole way and do a combined degree, don’t forget that you get the chance to do a Minor subject in your first year at Lancaster University too!
This brochure was created using vegetable-based inks, balanced 123kg of carbon, and helped to protect 86m² of land.