Discover your world
Computing and Communications

lancaster.ac.uk/scc

Lancaster University
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 help you unlock your potential. We offer some of the best opportunities in the country to get you industrial experience from placements and internships throughout your studies, as well as chances to push the subject to its absolute limits by engaging with our ongoing research. University is so much more than just the academic programme, so we strongly recommend that you visit us to find out why we believe Lancaster is a great place to study! The School and I look forward to welcoming you to Lancaster.
For ambitious sparks

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

Software is everywhere – from the mobile phone in your pocket to the Mars Exploration Rover, software is integrated into all aspects of 21st century technology. Computer Scientists and Software Engineers design, communicate, implement, integrate and test this software on all forms of computing platforms.

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!

You can have the opportunity to enhance your CV through internships and placements. Dedicated Knowledge Business Centre 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 and its implications from the low level technical to the implications for people and society. 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.

£12m

Over £12 million of research funding currently in the School (2018)

#3

3rd in the UK for graduate prospects (The Guardian University Guide, 2020)

94%

Students said that they could access specialised equipment, facilities or rooms when they need to (National Student Survey, 2018)

We hold an Athena SWAN Bronze Award for encouraging Gender Equality and Diversity in Higher Education.

Programmes are currently accredited up to and including the 2017 intake with future years pending re-accreditation from the British Computing Society (BCS) - The Chartered Institute for IT. Studying a BCS-accredited degree provides the foundation for professional membership of the BCS on graduation and is the first step on the pathway to becoming a chartered IT professional.
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 – 4th Year

New experiences for Edward
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.

Outreach
Visit primary and secondary schools to run their weekly Code Clubs. Every year we recruit Outreach Ambassadors to provide the extra-curricular activity for school pupils interested in computing. You’ll teach them how to create games with their teacher, build websites and learn how fun computing is, while gaining hands on teaching experience, and earning money.

Women@Infolab
Women@Infolab supports female staff, students and academics working and studying in 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 supported some of our fantastic undergraduates to present their work at the annual British Computing Society Lovelace Colloquium.
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.
Did you know that we offer a Study Abroad variation of our Computer Science programme?
You could spend a year at one of our partner institutions in Europe, USA, Canada or Australia. The curriculum is identical to ours at Lancaster, so you won't miss anything, and best of all, it gives real credits which means your course isn't any longer! You'll be motivated by topics that become progressively deeper and more complex, while gaining experience in a different culture, and broadening your professional network.
If you don't fancy a full year abroad, why not try Vacation Travel? The Global Experiences team organise the trip for you during the holidays, for a few weeks, and you travel with other Lancaster University students, to exciting destinations such as Malaysia, China, Germany and the USA.
www.lancaster.ac.uk/studyglobal-experiences
Fraser Benjamin
BSc Computer Science – 1st Year

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
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, including Software Development, Information Systems, and Digital Systems. 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.

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.

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.

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.

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

<table>
<thead>
<tr>
<th>Course Details</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 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 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 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 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>
</tr>
<tr>
<td>G601 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 / DAB</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.
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.