SOLENT UNIVERSITY SOUTHAMPTON

www.solent.ac.uk

2024

Computing

2024 undergraduate courses

Contents

Computing

Whether you want to specialise in computer science, software engineering, data science, AI, network engineering, cyber security, cloud computing, DevOps or web development, Solent has the course for you.

With recent and significant investment in our industry-standard specialist facilities, highly qualified staff and a regular programme of guest speakers, you'll be supported to develop the specialist knowledge you need for a fantastic career in the computing industry.

Why Solent?

- Courses designed to equip you with the knowledge, skills and attributes prepares you for your chosen career.
- Strong collaboration with high profile organisations such CISCO, Juniper and IBM enables you to explore new developments within the industry.
- Gain valuable industry experience through the optional placement year.
- Opportunity to progress to one of our postgraduate courses such as the highly successful MSc Artificial Intelligence and Data Science.

Accreditations and professional qualifications

All our courses are accredited as BCS Educational Affiliate to ensure they meet the rigorous standards set by the profession.

Gain professional qualifications alongside your degree including CCNA Routing and Switching, CCNA-Security, CISCO CyberOps and CEH (Certified Ethical Hacker), equipping you with the right set of practical and technical skills that are highly valued by the industry. You will be able to gain these qualifications alongside your chosen degree and for free.

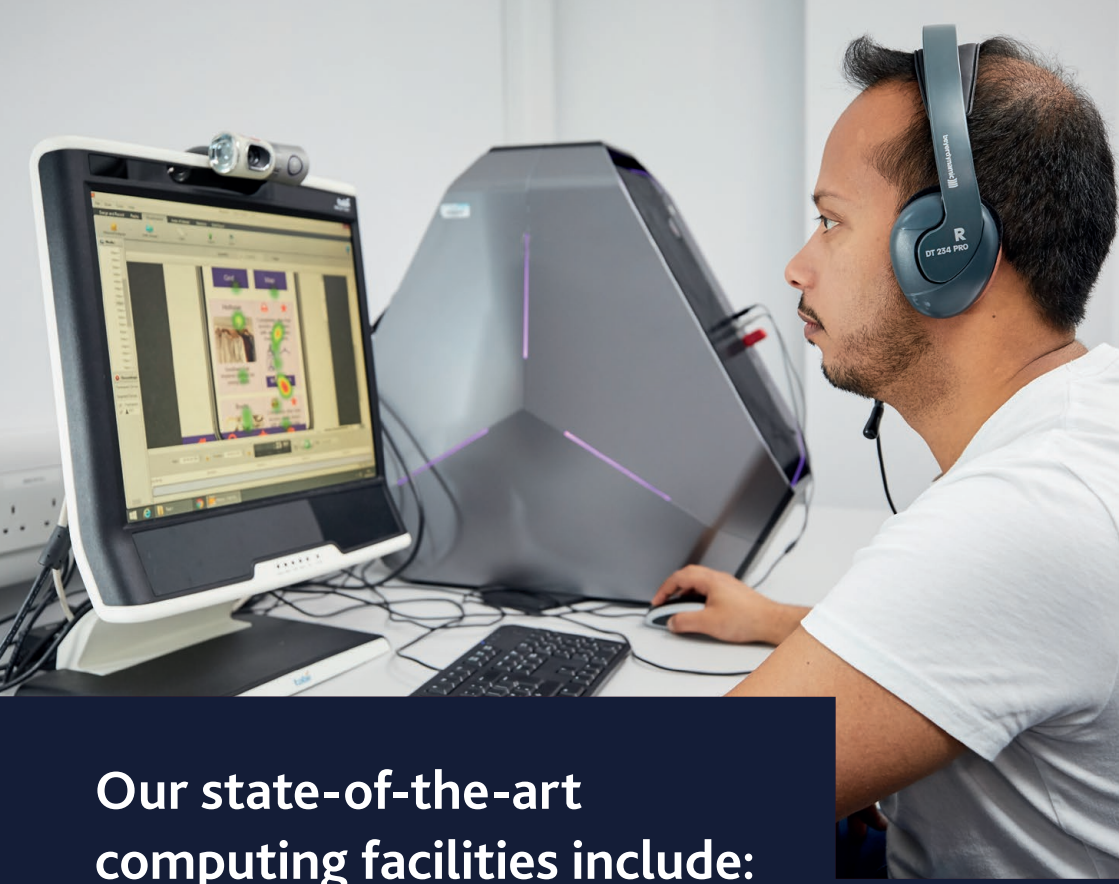
Teaching Excellence Framework

Gold-standard teaching and opportunities

Our focus on practical knowledge and employment opportunities is just one of the reasons we're rated gold in the latest Teaching Excellence Framework (TEF) review from the UK government Office for Students.

TEF recognises excellence in teaching, learning and achieving positive outcomes for students - with gold status awarded only to universities offering outstanding student experience and career outcomes.

in the UK for assessment and feedback for computer science studies
NSS 2023



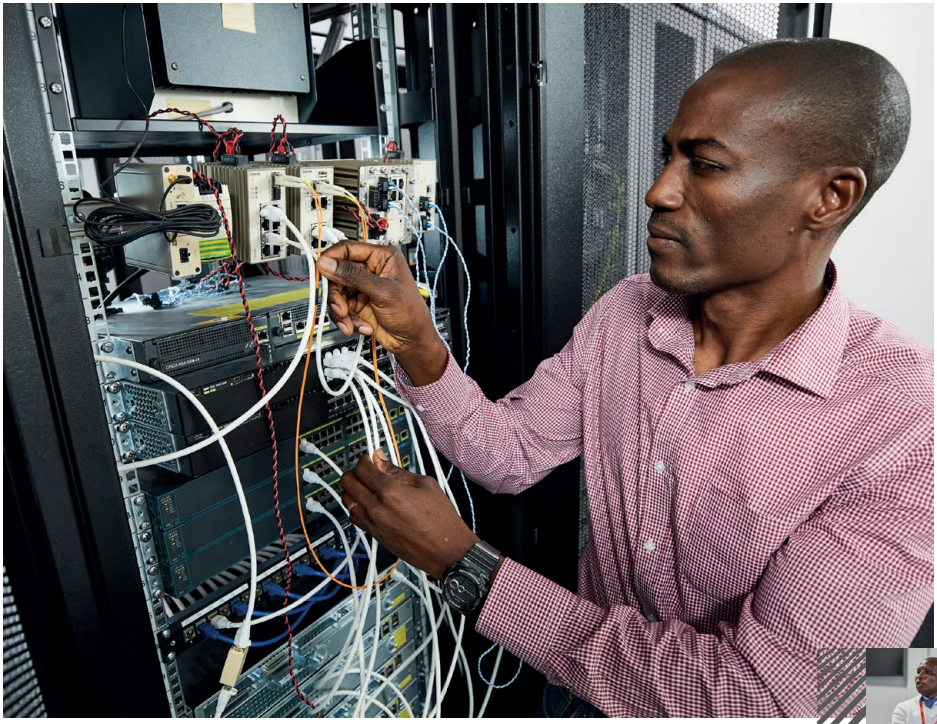
Our state-of-the-art computing facilities include:

- Computing labs with a motion capture studio, extensive hardware and the latest industry-standard software.
- Modern networking labs with Cisco routers and switches, CCNA and CCNP bundles, multi-vendor network devices and high-performance servers.
- Networking lab machines equipped with software including Cisco Packet Tracer, OPNet, VMWare, Open NMS, Wireshark, and GNS3 in Windows and Linux environments.
- Robotic devices such as robotic arms and drones that can be used to be programmed and used to develop apps for android devices.
- A range of real mobile devices mounted on flexible tethers that can be used to test websites and apps on real equipment.

New for 2024

Our computer courses will create a new digital centre of excellence with four bespoke computer technology laboratories, including a smart laboratory, an artificial intelligence laboratory, a user-experience laboratory and a cyber-security laboratory.

We have invested in an up-to-date dedicated 80-licence Nutanix Virtual Desktop Infrastructure (VDI) framework system which allows the design and deployment of virtual lab clusters and complex configurable sub-networks to mimic industry application requirements.



Employment opportunities

Whatever course you're on, you'll be supported by our highly experienced course teams, with access to excellent resources to develop your skills and apply them in the professional environment.

Well-qualified network engineers are in high demand across many organisations for setting up, developing and maintaining computer networks to ensure data is transferred across digital and telecommunications networks.

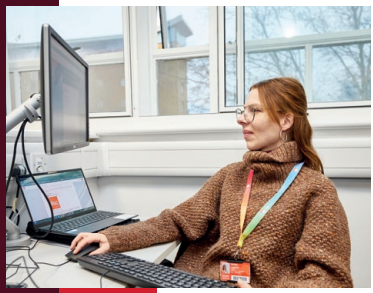
If you want to protect the world from hackers, viruses and cyber attacks, then our cyber security courses enable you to develop the in-demand skills to kickstart a fantastic career in cyber security – one of IT's most hotly debated sectors.

If you have a passion for programming and want to study a degree that can lead to a varied career, Solent's software engineering programme offers a broad range of technical computing skills across a range of areas, preparing you for a fantastic career in industries such as retail, healthcare, research and development, business/IT services and Silicon Valley high-tech.

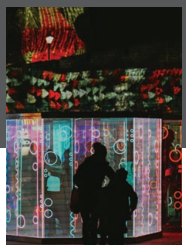
As computer scientist, you will be able to apply your knowledge of computer programming, using Java and Python, to develop software systems and databases. It also suits those who aspire for a career where they support, research, design, deploy and maintain computing systems.

You could be among our students working with top organisations including:

Cisco Systems
IBM
Juniper
Symantec Security UK
Hewlett Packard Enterprise
Electra Networks
QinetiQ
Quostar
VeriFone
TalkTalk
Rackspace
Vodafone
Peer 1 Hosting
Softcat
Fujitsu UK
Guernsey Post
Retail Manager Solutions Ltd



Our great city



- **Southampton is a city with something for everyone. Beautiful city-centre parks, an electric night-time economy and a thriving arts and music scene all meet to offer residents something truly unique.**

The city has great shopping, with top brands at Westquay, and state-of-the-art cinema Showcase, as well as a variety of unique and independent shops represented on the high street.

It's also a city of Championship football, world-class sailing and international cricket. Its many pubs and clubs host breakthrough bands and big names. Stadium acts come to the Ageas Bowl, while the O2 Guildhall hosts mainstream pop, and festivals are a regular part of our city park life.

With a vibrant and diverse student population of around 40,000, in a city of over 250,000, its a great place to budget and live as a student.

Research at Solent

At Solent, research isn't just for academics, or for postgrads and PhDs. Research is for everyone, from undergrad up.

Studying with us, you're part of an active research community – not just learning from researchers in every field, but incorporating that research into your studies.

The way we teach, the practical projects and applied theory you'll be studying? It's informed by the latest research, inspiring and encouraging you to ask questions, investigate problems, propose solutions and create new knowledge. And ensuring you'll be at the forefront of industry thinking when you graduate.

Along with the habits, thinking processes and curiosity to become a learner for life – evaluating research and industry developments throughout your career – you'll have plenty of opportunities to develop your own research as well, or to become part of a larger project.

Solent students have co-authored papers, worked hand-in-hand with industry on knowledge exchange projects, crewed research films, and even presented their work at the UK Parliament.

It's a chance to deliver real-world impact in our communities and our society – and it's open to everyone.

Our areas of focus

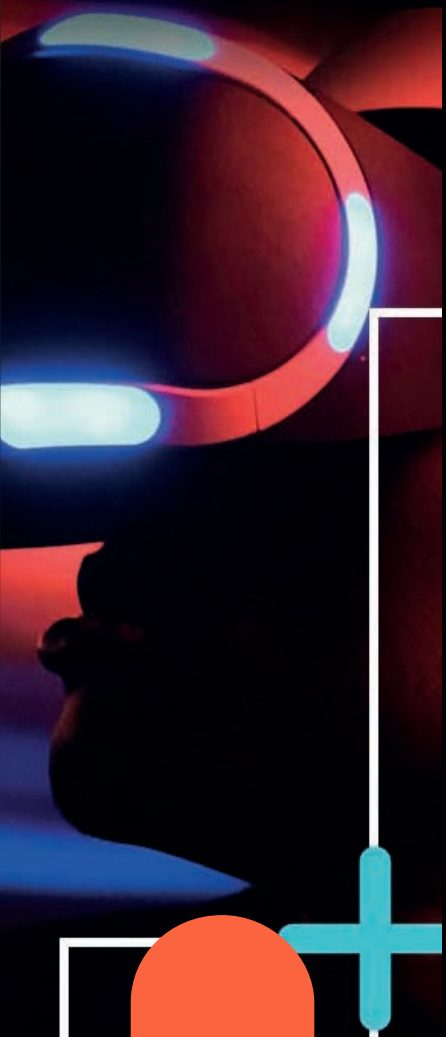
Across all of our courses we deliver a unique curriculum shaped around inspiring industrial partnerships, ground-breaking professional insights, knowledge exchange and research, divided into four key areas of focus:

- Environment and engineering
  Safe and sustainable energy, transport and material systems.

- Social research and policy
  Improving individual and community wellbeing through practice, provision and policy.

- Human function and health
  The evaluation of human function, health and the social context.

- Media, culture and the arts
  Communication, cultural and media studies, creative arts and practice.



SOUTH COAST INSTITUTE OF TECHNOLOGY

South Coast Institute of Technology partnership

Solent University is a leading member of the South Coast Institute of Technology, a partnership of education providers and industry-leading employers that are working together to develop opportunities for education and employment in the local maritime, engineering, and digital industries.

The Solent region is going through a new wave of growth and innovation focused on the maritime, engineering and digital industries – some of the biggest and most exciting sectors in our region. And that expansion is opening up plenty of career opportunities for talented, highly skilled people like you.

Our highly supported and practical higher technical qualifications, apprenticeships, professional qualifications, and university degrees are developed and taught in collaboration with employers, offering high-quality training, expert teachers, and state-of-the-art equipment and facilities, alongside real-world experience to prepare you for a fantastic career in the maritime, engineering or digital industries.

So if you're looking to live, study and work in the Solent region, explore our range of IoT courses – to unlock your full potential, pursue your dream job and make a positive impact on the world.

We work with well-known employers to deliver the courses the maritime, engineering and digital industries are looking for – industries which are hungry for new, talented leaders, engineers, technologists, technicians and creatives.

BSc (Hons)

Computer Science

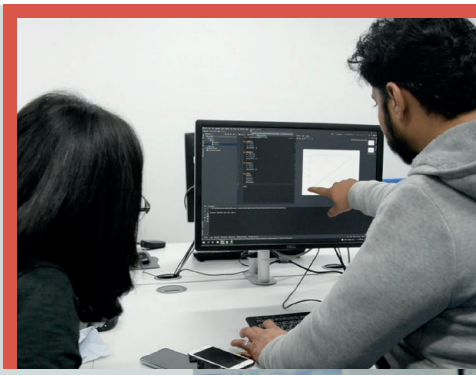
UCAS tariff: **112-128**
Course page and UCAS code: **www.solent.ac.uk/CS01**

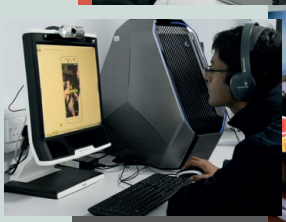
This practical degree encourages you to develop an extensive knowledge of computer programming using Java and Python. This BCS-accredited degree will help you build practical experience in designing, building and implementing computer systems.

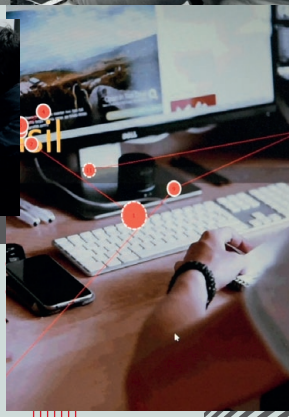
- Professional practice is integrated in the course, with several staff accredited in Prince2, Oracle Java and SQL, EC-Council Certified Ethical Hacker and through the Solent University Cisco Academy.
- Gain industry-recognised professional qualifications alongside your degree, such as PCAP Python Fundamentals.
- You will study in up-to-date specialist facilities including a usability lab with eye-tracking facilities, used to test and refine interfaces.
- Our close links with industry ensure this course is informed through a range of guest speakers, live briefs and access to regular BCS (The Chartered Institute for IT) meetings, held at Solent University.

Suitable roles for graduates include:

Software developer, Web designer, Full stack developer, IT support, Network manager, Project manager, Database manager, Data analyst, DevOps, User experience (UX).







Liam Charmer

Director of Technology and Innovation, Remiam Ltd

BSc (Hons) Computing, 2017

How did Solent help prepare you for your career?
Solent prepared me to be an innovative and creative thinker and helped me gain the core skills of working within a professional environment. The entrepreneurial focus at Solent really geared me up and pushed me towards starting and running my own business.

Favourite Solent memory?
That’s quite a hard one as there were so many – from the technology champions recruitment and events, to the hackathon that one of my lecturers ran, the British Conference for Undergraduate Research (BCUR) event I presented work at, working with my classmates … I had so many! I also graduated with a first-class honours degree and had the highest grade in computing for that graduation year.

Tell us about your career story so far.
After graduating I continued with my freelance work in areas including web development, app development, ux/ui design and training. I also became director of the umbrella innovation company, Remiam Ltd, using a variety of technologies and working with web, mobile and smart home devices to follow the new exciting trend of the Internet of Things. A recent product we developed is an app called ‘Instarama’ which creates panoramic images for Instagram. I’m now working with a variety of clients around the world and going to a variety of networking events across the UK, providing products and services to clients.

A typical working day for me is managing two businesses, liaising with my clients, searching for new clients and creating innovative products – oh, and the occasional Starbucks!

Any tips for others wanting to follow in your footsteps?
My number one tip is to be passionate about the technology industry and you will reap the benefits later.

BSc (Hons)

Computer Networks Engineering

UCAS tariff: **104-120**
Course page and UCAS code: **www.solent.ac.uk/CNE1**

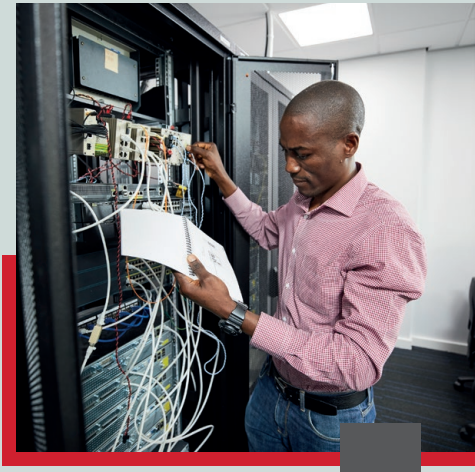
Well-qualified network engineers are in high demand and this degree is delivered in partnership with the Cisco Networking Academy, providing essential skills for the computing industry.

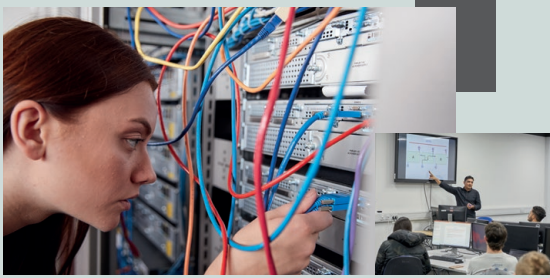
- This degree is developed in partnership with the Cisco Networking Academy.
- Gain industry-recognised professional qualifications alongside your degree, including CCNA Routing and Switching, CCNA Security, Cisco Cybersecurity Essentials, Cisco CyberOps and PCAP Python.
- Study in our high-tech computer networking labs which include equipment such as Cisco routers and switches, CCNA and CCNP bundles, multi-vendor network devices and high-performance servers.
- Attend the Solent placement and graduate fair, with great employment prospects – many of our students who did a placement at one of the exhibiting companies was offered a graduate job after their studies.

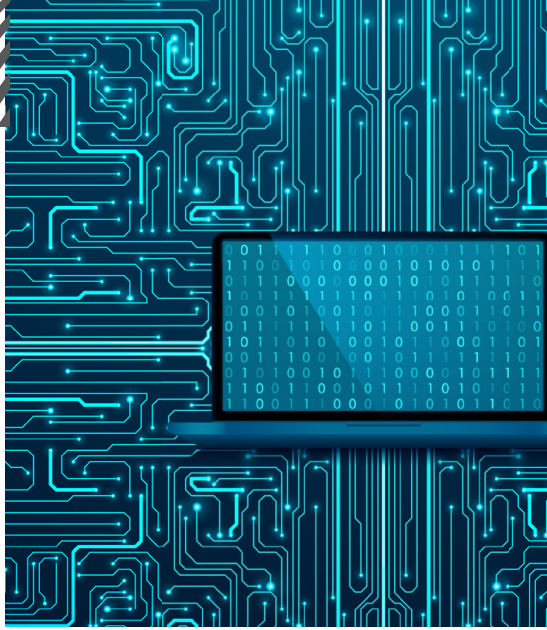
This course will equip you with the practical skills required to design, implement, secure and manage computer network systems across a wide breadth of industries. Throughout your studies you will be working in our high-tech computer networking labs with industry-standard facilities, featuring a wide variety of equipment including Cisco routers and switches, CCNA and CCNP bundles, multi-vendor network devices and high-performance servers.

The course is delivered by a team of passionate, friendly and research-active qualified academics who work at the forefront of the field. Our academics are also fellows of the Higher Education Academy as well as Cisco-certified instructors.

Suitable roles for graduates include:
Network Engineer, System Support Analyst, Network Security Analyst, System Architects, Network Systems Consultant, IT Support Engineer, Product Support Engineer.







Peter Baker

Technical Support Engineer,
Colva Tech

BSc (Hons) Computer Systems and Networks Engineering 2019

Tell us about your current role?
I'm currently working as a Technical Support Engineer at Colva Tech. I am part of a team that provides Technical and IT Support to local business. This can range from password resets to implementing network and server infrastructures.

What do you enjoy most about your role?
I enjoy learning and testing new technologies and the variation of tickets raised. Each day can be different, every customer can have unique issues and I like customer interaction, engaging with them, learning what they do. I get satisfaction in completing a project or troubleshooting.

What are the biggest challenges?
The biggest challenges I would say is staying up to date with the latest technologies, but this would also be something I enjoy. Another I would say is, having to think on the spot, sometimes we are faced with complex queries or issues that we may not have the answer to.

How do you feel your studies at Solent helped prepare you for your career?
My studies helped as it covered a lot of the day-to-day jobs such as server management (AD, DHCP, DNS, IIS). This helped me to get a good understanding of the principles and how to implement. It also would cover a lot of Networking principles Particularly with Cisco (CCNA, CCNP) as this was my focus for the MSc course which I studied at Solent after my degree.

What advice would you give to those wanting to follow in your footsteps?
Stick to it, keep up to date with new technologies. Also look at industry certifications online, some companies may require specific ones other may even provide them. Quite often the training is free but companies will often fund the exams. Be a team player, put yourself out there.

What's next for your career?
I'm currently undergoing my Acronis Certifications. The plan is to become a certified partner. As with my career progression, next step is building my knowledge. Learning from the Senior techs, and one day, leading my own team, or even a company.

Guest speakers

Solent University holds regular speaker programmes as part of lectures, as well as special events such as ‘Women in Tech’ and a regular event, ‘Happy Hour Talks’.

The speakers offer insights into working within the digital and tech industry by bringing in practitioners, including Solent alumni, to share their professional journeys, followed by discussion and networking opportunities.

Past speakers have included:

- John Kilmister, Azure Software Architect
- Emily Whelen, Head of Cloud Sales, GIACOM
- Storm Rae, Head of Learning and Development, The National Museum of Computing
- Franky Biles, Cyber Security Inclusion and Diversity, Lloyds Banking Group
- Samantha Bradshaw, IT and Innovation Director, dnata
- Bradley Marshall, Control Systems Engineer, Ocean Infinity (Solent alumnus)
- Adam Chu, Software Engineer – Autonomy, L3Harris – ASV (Solent alumnus)

BSc (Hons)

Cyber Security

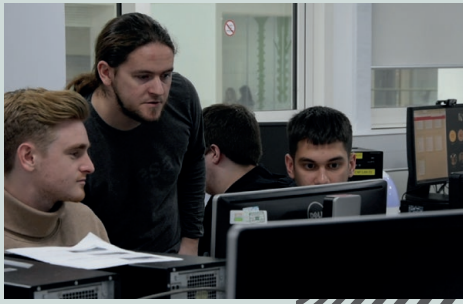
UCAS tariff: **104-120**
Course page and UCAS code: **www.solent.ac.uk/CYS1**

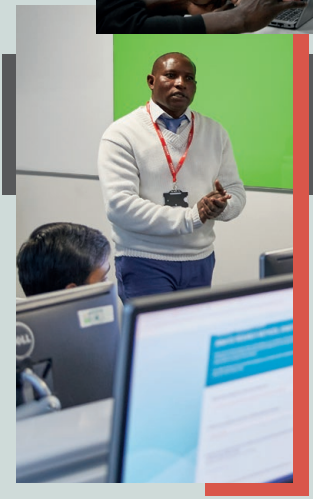
Want to protect the world from hackers, viruses and cyber attacks? In partnership with the CISCO Networking Academy and EC-Council, on this course you'll learn cutting-edge technologies, processes, strategies, policies and industry standards to protect network systems, and develop the in-demand skills to kickstart a fantastic career.

- QAA quality standard.
- Gain industry-recognised qualifications alongside your degree, including CCNA Routing and Switching, CCNA-Security, CISCO CyberOps and CEH (Certified Ethical Hacker).
- Study in our high-tech computer networking labs with industry-standard facilities, including Cisco routers and switches, and software including Kali Linux, Metasploit and a wide range of tools capable of foot printing, reconnaissance and scanning.
- You'll have the chance to gain real-world experience alongside your degree thanks to our links with IBM, B&Q, the Office for National Statistics (ONS) and Carnival UK.
- You will be studying in the south-east which continues to dominate the tech industry, alongside London (BDO UK, November 2022).

You will study in our high-tech computer networking labs to investigate the methods that hackers use to compromise vulnerable systems, and also look at mechanisms that can be used to secure them against attack, including specialist software and dedicated security appliances.

Suitable roles for graduates include:
Cyber security analyst, Network security manager, Cyber security consultant, System analyst, Incident manager, CyberOps manager.





Ben Peckham

Associate Systems Engineer, Juniper Networks

BSc (Hons) Cyber Security Management, 2020

> “From a technical perspective, everything I needed for a post-grad position was provided through my course.”

Tell us a bit about your role with Juniper Networks.
I’m a systems engineer, which means I spend my day learning and working with the latest networking and security technologies.
My technical role in a sales team means I design, demonstrate and work with network architectures on Juniper-driven solutions. I help sell our technologies to empower and enable networking teams all over the country and ultimately connect people together.

What do you enjoy most about your role?
As a systems engineer I get the best of both worlds. On one side this means working on technical solutions – for example, data centre fabric deployments. On the other, I’m in sales, which offers the opportunity to visit customers on-site and connect.

What are the biggest challenges?
As a systems engineer in such a fast-paced industry, the learning curve is always steep – there is always something new to learn, whether this be on the technical or sales side.

What advice would you give to those wanting to follow in your footsteps?
Be enthusiastic in what you do every day, knowing that it can help someone else. Work relentlessly for what you want. A strong can-do attitude can carry you a long way!

How do you feel your studies at Solent helped prepare you for your career?
From a technical perspective, everything I needed for a post-grad position was provided through my course. I remember, during my first interview with Juniper, sitting in front of a whiteboard and being asked how I would design a campus network, and we had recently covered this in a lecture. Plus, presentations to the rest of my class really helped as I now present in front of customers.

BSc (Hons)

Software Engineering

UCAS tariff: **112-128**
Course page and UCAS code: **www.solent.ac.uk/SE01**

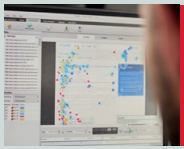
Do you have a passion for programming? Ranked top 20 in the UK for teaching and accredited by BCS, on this degree you can build your portfolio of experience ready for a career in the tech industry.

- You will gain a comprehensive understanding of software development principles and industry-standard practices.
- You can expect to work on real-world projects, collaborate with industry partners and gain practical skills that are highly valued by employers.
- You will be able to access a range of modern facilities and software, including high-spec computer labs, device testing labs and a usability lab with eye-tracking facilities.
- You will be taught by knowledgeable faculty members who are passionate about teaching and mentoring students, and you can attend guest lectures from experts working in the tech and digital industries.
- Recent course graduates have gone on to various roles in the software industry including IBM, Softcat, Fujitsu UK, Guernsey Post and Retail Manager Solutions Ltd, among others.

The course aims to equip students with the technical skills, problem-solving abilities and critical thinking necessary to design, develop and manage software solutions.

You'll cover a range of topics including programming, software testing, networking and security, algorithms and data structures, user-interface design and databases, as well as artificial intelligence, data science, machine learning, mobile application development and web technologies.

Suitable roles for graduates include:
Cyber security analyst, Network security manager, Cyber security consultant, System analyst, Incident manager, CyberOps manager.



Bradley Marshall

Control Systems Engineer, Ocean Infinity

BSc (Hons) Software Engineering, 2022

Tell us a bit about your role.
I am currently a control systems engineer at a company called Ocean Infinity. Within my role I design and develop control systems for remotely operated underwater vehicles (ROVs), as well as their respective launch and recovery systems (LARS) for the Armada fleet of ships. The equipment onboard is used to collect survey data, and is designed to be operated remotely via satellite communications from within dynamic remote control centres (RCC).

What do you enjoy about your work?
I enjoy working for a company that is enabling the creation of innovative robotic technology to transform operations at sea to enable people and the planet to thrive. Having the software that I developed being used by a collection of operators worldwide definitely puts into perspective the importance of what I work on.

How did studying at Solent help prepare you for your career?
Studying at Solent University gave me the experiences I required to perceive the inner workings of a system, and how each part should efficiently interact with each other. Unbeknownst to me at the time, that technical understanding of small simple systems has become a pivotal part of my career, and at Ocean Infinity the scale of that has only grown. But that initial perception which was indoctrinated in me by my lecturers definitely shaped my future understandings.

What are your favourite memories of Solent?
Some of my favourite memories while a student at Solent University were the encouraged events that my lecturers went out of their way to organise in order to support all students. These ranged from competitions around the country (where I was fortunate enough to win a few), to industry talks where invited alumni and other important individuals in business would come to share their stories and advice.

What advice would you give to students?
One thing that I would always advise is persistence. During my journey – from the beginning of university, to graduation and beyond – there were times when I had doubts about the feasibility of achieving what I aspired for, especially on my dissertation project, but when I continued to persist, through countless different iterations, I had success. Not giving up is what leads you to where you're going. To further my career, I intend to work on innovative solutions to problems that aid people in progressing towards a future that benefits all.

Solent students win first place at Royal Hackaway

In February 2021, three students from Solent University won first place in the Royal Hackaway Hackathon 2021.

The Royal Hackaway is an initiative of the Computing Society at Royal Holloway, University of London, which aims to provide inclusive events to help students learn and grow. The 2021 hackathon asked participants to create something interesting that hadn't been seen before.

Matthew Dear (BSc (Hons) Software Engineering), Bradley Marshall (BSc (Hons) Software Engineering) and John Hawkins (BSc (Hons) Audio Engineering) won first place for their design of a NoSQL database that stores data and removes empty cells, allowing it to produce tiny files that are faster to traverse, while maintaining data integrity.

We caught up with the team to find out more about the experience, and how it felt to win.

Congratulations on your win! Why did you decide to enter this hackathon?
We decided to participate in the Royal Hackaway as we had heard good things about it from members of the Solent Computing Society who had competed the year before. For this hackathon, Matt, John and I teamed together to work on a project, additionally competing with other members of the Solent Computing Society who were also attending the event.

Tell us about the idea you worked on during the competition.
Our team knew what we wanted to work on during the event, which was an idea that had come to me a few weeks prior. We were making a brand-new databasing technology – FlitDB, as we later decided to call it. Flit means to move swiftly and lightly, which is something that we felt reflected the design of our new database technology, as we had designed it around a dynamic varying amount to skip, as all data that results in a nullified value would be nixed from the database and not stored at all.

Making a new database and structured format, as well as the technology to read and write to it, was no easy feat, but our team prevailed, and we worked throughout the night to get a working prototype. Towards the submission deadline for the event, we had our basic prototype reading and writing values to the database. We were all impressed with how small the database was – and could be – with our new technology, and with only a few minutes to spare we submitted our project for judging ... then the hours passed. Eventually judging concluded. Likewise, just as our team was impressed with how small the overall size of the database was, so were the judges. Our team was left in a state of astonishment and happy triumph when we were announced as the overall winners of the event.

What have you learnt as a result of this competition?
Aside from winning the competition, we have all learnt lots of new things, such as lossless text compression, C++ and system API level requests for input and output operations on physical hardware. Overall, the event was very beneficial, both in terms of what we learnt, and also what we received – recognition for our hard work (and an assortment of prizes).

Course list

Course	UCAS tariff points	Work placement opportunity	Foundation Year available
BSc (Hons) Computer Science	112–128	Y	Y
BSc (Hons) Computer Networks Engineering	104–120	Y	Y
BSc (Hons) Cyber Security	104–120	Y	Y
BSc (Hons) Software Engineering	112–128	–	Y
Computing Foundation Year	48	–	–
HNC Cyber Security Technologist	16	–	–
HNC Data Analyst	16	–	–
HNC Network Engineer	16	–	–

How to apply

Solent University code name: **SOLNT**
Solent University UCAS code: **S30**

1

Research universities
March – September

2

Work on your UCAS application
September – January

3

Apply online via UCAS
By 31 January

4

Check your UCAS Hub
This is where you'll see if you have an unconditional offer (the place is yours) or a conditional offer (based on exam results or other evidence), or if your application has been unsuccessful.

5

Reply to your offers
Select your firm choice. Select your insurance choice – this is a back-up choice in case you don't meet the conditions for your firm choice. Decline your other offers.

6

Find out if you've got your place
You'll see in your UCAS Hub if your place is confirmed. BTEC results are published from July onwards and A-level results will be published in mid-August.

www.ucas.com

Unsure what to do with your future?

Confused about the university application process?

Follow our **52 Things To Do** guide, designed to help you every step of the way.

From thinking about the degree that's right for you to writing a personal statement, we've got it all covered – with handy advice and tasks designed to take no more than an hour each week.

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